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SECURITY WEAKNESSES AT THE NUCLEAR WEAPONS LABORATORIES

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BEFORE THE

COMMITTEE ON GOVERNMENTAL AFFAIRS
UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

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SECURITY WEAKNESSES AT THE NUCLEAR WEAPONS LABORATORIES

TUESDAY, OCTOBER 11, 1988

U.S. SENATE,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Washington, DC.

The Committee met, pursuant to notice, at 10:05 a.m., in room SD-342, Dirksen Senate Office Building, Hon. John Glenn (Chairman of the Committee) presiding.

Present: Senators Glenn and Bingaman.

OPENING STATEMENT OF CHAIRMAN GLENN

Chairman GLENN. The hearing will be in order.

Nine years ago on October 2, 1979, I released a report written by my Committee staff on the Erroneous Declassification of Nuclear Weapons Information.[1] The report dealt with the ability of hundreds of foreign visitors and other uncleared persons to obtain extremely sensitive information about our nuclear weapons design and performance from reading mistakenly declassified documents in the public library of the Los Alamos National Laboratory. Over 100 such documents were found at the time, leading to a shutdown of the library for over a year.

DOE promised to fix that problem and later on claimed to have done so. The library is, as far as I know, no longer a problem.

At the time, our focus was on public areas of the laboratory mistakenly containing secret, restricted data. We did not question DOE about its procedures for clearing visits by foreign nationals to other parts of Los Alamos or to the other weapons labs because we assumed those procedures were in place and stringently observed. Apparently, we were wrong.

In July of 1987, as part of my ongoing concern about the spread of nuclear weapons, including illicit transfers of nuclear weapons-related technology, I asked the GAO to determine the extent to which foreign nationals participate in activities at our nuclear weapons labs, and to assess the effectiveness of DOE's controls to identify visitors who pose security risks.

Over the last year, GAO evaluated DOE's record in clearing over 1,000 foreign visitors. This was not just a cursory look; GAO surveyed records on over 1,000 foreign visitors to the Livermore, Los Alamos, and Sandia national labs—facilities where our most advanced nuclear weapon research takes place, facilities that are absolutely vital to our national security, and facilities that the public rightfully expects will be fully protected against foreign intelligence activities.

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[1] See p. 45, "Erroneous Declassification of Nuclear Weapons Information," hearing, Subcommittee on Energy, Nuclear Proliferation and Federal Services, Committee on Governmental Affairs, October 2, 1979.

I am releasing this morning GAO's report to me on the results of its investigation. And let me just add here, as far as the news people go, we had an embargo on this. Unfortunately, through either a misunderstanding or a break in that confidentiality, this was released ahead of time and is in the papers this morning, some of it, and it was on the radio this morning.

We are looking into how that release occurred. The report was intended to be embargoed, so we did not deal unfairly with anybody. The embargo was broken unintentionally as far as we were concerned.

I am releasing this report this morning on the results of the investigation. The report tells us that the Department of Energy, its relevant field offices, and the three national labs themselves have, despite ample warnings that serious administrative problems were at hand, systematically failed to enforce existing security standards for clearing foreign visitors.

GAO will tell us this morning about instances involving suspected foreign agents of communist nations that have obtained access to our nuclear weapons labs. Of the 181 visitors from communist countries that were surveyed by GAO, DOE failed to obtain necessary background information on 65 percent of those visitors—65 percent of those visitors from communist nations.

We will be told that DOE obtained even less information on visitors from other sensitive countries, including several nations suspected of developing nuclear weapons. Of the 637 visitors to these labs from these countries, we will see that DOE only managed to obtain background checks on two percent of these visitors prior to the actual visits.

We will hear about a "Watch List" that was developed by DOE to identify specific foreign organizations suspected of possessing technical capabilities related to nuclear weapons. Having developed this list, DOE reportedly did not perform background checks on about 10 percent of the lab visitors who came from these very organizations.

We will see how at least 14 foreign visitors managed to visit these labs and discuss nuclear weapon-related topics that do not appear, but which should appear, on DOE's so-called "Sensitive Subject List."

We will also be told that DOE does not even have an integrated information system for handling data concerning these visits, nor does DOE conduct regular audits or management reviews of the foreign visitor program.

After hearing GAO's recommendations, we will then listen closely to determine what the Department of Energy is doing about these many problems. Clearly, the GAO's findings raise very serious concerns about the adequacy of security at our most sensitive nuclear facilities, and given that the study was limited to only a 21-month time frame from January of 1986 to September of 1987, there may be a strong possibility that we will today only be looking at the tip of a monstrous iceberg.

In this regard, it is of interest to see the growth over the past decade in the number of visitors to the weapons labs from countries of proliferation concern. Argentina has gone from one visitor at Los Alamos over a 25-month period from 1977 to 1979, to 14 visitors over a 21-month period in 1986 and 1987.

Brazil has gone from three visitors at Los Alamos to 19 visitors over the same period. India has gone from 13 to 56 at Los Alamos, but had an additional 93 people at the other weapons labs from 1986 to 1987.

Iran has gone from three to five visitors at Los Alamos, but had an additional 20 visitors at the other two labs from 1986 to 1987. The background check, I understand, on one of those persons out there came 8 weeks after their assignment had started, an "assignment" being any time period from 2 weeks up to a couple of years, as I understand DOE's definition of the term.

Israel had zero visitors at Los Alamos in 1977 to 1979, but had 60 visitors in 1986 and 1987, plus an additional 128 visitors at the other labs. Pakistan had zero visitors at Los Alamos in 1977–79, but had four at Los Alamos in 1986 and 1987, with seven other visitors at Livermore.

South Africa had one visitor at Los Alamos in 1977–79, but had seven visitors there in 1986 and 1987, with ten others at the other labs.

Now, perhaps there are benign explanations for this growth in visits to the labs from these countries, but is it coincidence that this growth in foreign interest and access has occurred during exactly the same period when the labs' work on weaponry has expanded and intensified? I think if we believe that, we might as well believe that it is just a mere coincidence that the Soviet space shuttle just happens to look exactly like our own.

So I am looking forward to the testimony this morning. I only want to add one other statement to this. I have heard from a couple of sources now alleging that I am concerned about nuclear safety at Savannah River, and at other DOE facilities only because it happens to be an election season. We have heard that from a couple of sources now over at DOE.

Well, my work on DOE's problems with safety at its nuclear weapons plants and with security at the weapons labs is certainly not politically motivated. As I said in the first part of my statement, our work on the security issue goes back to 1978 and 1979 during the Carter administration, where they were equally unhappy with what we turned up, I might add.

I was critical of DOE's leadership then because of lapses of judgment and procedures, and I am critical now with Mr. Reagan's appointees in charge when we developed some of basically the same information.

The Committee's reports on nuclear safety go back to 1976, and our work on DOE's problems has been going on for 4 years, not just during this election year. So I understand that all of DOE's political appointees in charge of security are at the White House this morning briefing the President on the state of security and safeguards at DOE facilities. I hope they are telling him about the substance of their problems and not papering over DOE's security errors or its record in health and safety matters with charges of political motivation. Nothing could be further from the truth.

Before we get to the questions, Senator Bingaman.

Senator BINGAMAN. Well, Mr. Chairman, I did not have an opening statement. I am very pleased to be here. I look forward to the testimony.

Chairman GLENN. Good. Thank you very much.

First, this morning, we have Keith Fultz, Senior Associate Director of the General Accounting Office. Mr. Fultz, I did not get the names of your associates with you there. If you could introduce everyone for the record, we would appreciate it.

TESTIMONY OF KEITH O. FULTZ, SENIOR ASSOCIATE DIRECTOR, RESOURCES, COMMUNITY, AND ECONOMIC DEVELOPMENT DIVISION, U.S. GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY MARY ANN KRUSLICKY, GROUP DIRECTOR, AND JOHN R. SCHULZE, EVALUATOR IN CHARGE

Mr. FULTZ. I would be happy to, sir. On my left is Ms. Kruslicky, who is the group director in charge of basically all of our non-proliferation work that we do within DOE. On my right is Mr. Schulze, who was the evaluator in charge on this particular assignment.

Chairman GLENN. Good, fine.

Mr. FULTZ. I will summarize my statement and I would like my entire statement made part of the record.[1]

Chairman GLENN. Without objection, your entire statement will be included in the record.

Mr. FULTZ. We appreciate the opportunity to discuss our report on DOE's controls over foreign nationals who participate in non-classified activities at its laboratories. As you stated, DOE's laboratories conduct research and development efforts for its nuclear weapons program, as well as other classified activities related to defense issues, including the SDI project.

Each year, thousands of foreign nationals, including those from communist and proliferation-risk countries, visit DOE's weapons laboratories. Between January 1986 and September 1987, about 6,700 foreign nationals visited the three laboratories we reviewed; 222 were from communist countries, including the Soviet Union and China. In addition, 675 visitors came from sensitive nations suspected of developing nuclear weapons, primarily India and Israel.

As you can see on the charts on my right,[2] we have two classifications: one, those countries that are communist; that is the first chart nearest you. The total visit was 222 and, as I stated, the majority came from the Soviet Union, 57, and the People's Republic of China, a total of 118.

The other chart discloses those visitors from other sensitive countries, and I would highlight just the largest visitors. From Israel, we had a total of 188, and India had a total of 149, out of a total of 675.

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[1] See p. 47.

[2] See p. 60.

Although studies have shown that classified and sensitive information can be derived from unclassified access to its facilities, most foreign visits occur with little DOE oversight or approval.

As a result, suspected foreign agents and persons from facilities involved in nuclear weapons activities have obtained access to the laboratories without DOE's knowledge of their backgrounds.

We could not determine if sensitive or classified information has been lost, but because of three significant weaknesses in DOE's foreign visitor program, we have little confidence that adequate protection of weapons-related information and technology is achieved by DOE.

The first weakness is DOE's limited review of background information prior to the visits. Although FBI and CIA background checks are required for visitors from certain countries, DOE generally does not obtain these checks. And as you have stated in your opening comments, of 176 required checks for visitors from communist countries, DOE did not obtain background data for 119. Although DOE obtained the data on the remaining 57, it received the results for the great majority either during the visit or after the visit had occurred.

In addition, of 637 visitors from proliferation-risk countries such as India, Israel and Pakistan, DOE required background checks for only 77. However, it received the results of these checks for only 14 before the visit began. Some of these visitors were from facilities suspected of conducting nuclear weapons activities.

Second, DOE has little assurance that communist or proliferation-risk countries do not obtain sensitive information during the visits. Out of 818 such visits, DOE identified only one as involving a sensitive subject.

Now, our staff looked at those 818 visits and we identified an additional 37 that should have included information that was of a sensitive nature. These included technologies useful to weapons testing and uranium enrichment.

Further, we believe that other nuclear weapons research, development, and testing activities need to be added to DOE's Sensitive Subject List. Simply, we think that list needs to be expanded.

Finally, DOE does not effectively coordinate, monitor, or report on foreign visitors. It does not have an integrated system which disseminates visitor data to its field offices. We found a case where an individual who was denied access to one laboratory was allowed to visit another laboratory without the second laboratory being made aware of certain derogatory information.

Now, for the most sensitive visits, security plans and post-visit reports, what DOE calls host reports, are required to ensure that DOE institutes adequate controls and then documents what occurs during the visits. However, we found that only 36 percent of the security plans and only 25 percent of the post-visit reports were prepared as required.

Therefore, Mr. Chairman, all three essential components of DOE's system are breaking down. It is not adequately checking before, during, or after the foreign visits.

Mr. Chairman, the problems I have just described illustrate a dilemma which DOE has not effectively resolved. On the one hand, information and technology developed by the laboratories has peaceful applications and DOE wants to disseminate it as widely as possible, and we can understand that.

However, the information and technology also has a more sinister use, the nuclear weapons arena. In our view, DOE does not have sufficient checks to balance non-proliferation and security concerns with the need to advance scientific developments.

In order to prevent security breaches concerning nuclear weapons-related information, our report contains several recommendations to the Secretary. For example, we recommend that the background checks be completed prior to admitting a foreign national to a weapons laboratory.

We have also recommended expanding the Sensitive Subject List to include other areas that could be useful to proliferant nations. In addition, DOE needs to periodically evaluate compliance with its requirements. We found that DOE does not periodically examine the procedures that we are talking about here this morning.

We hope that you and the Committee will strongly encourage the Secretary to implement our recommendations.

This concludes the summary of my prepared statement. We would be pleased to respond to any questions that you or members of the Committee may have.

Chairman GLENN. Thank you very much. Do either of the other of you have a statement to make?

Mr. SCHULZE. No.

Ms. KRUSLICKY. No.

Chairman GLENN. Fine, thank you.

Mr. Fultz, before we begin, has GAO checked with DOE and other agencies to verify that the information in your study is unclassified in its entirety?

Mr. FULTZ. Yes, we have, sir.

Chairman GLENN. Okay.

Mr. FULTZ. We obtained classified information during the review, but that is not disclosed in our report.

Chairman GLENN. All right, fine.

As I understand it, DOE's Order 1240.2 is the basic order that spells out the security steps, is that correct?

Mr. FULTZ. That is correct.

Chairman GLENN. When was that order written?

Mr. FULTZ. I beg your pardon?

Chairman GLENN. When was that order written?

Mr. FULTZ. It was written in 1981. I believe it was January, 1981.

Chairman GLENN. As I understand it, it has been in the process of being revised for several years, is that correct?

Mr. FULTZ. That is correct. Efforts have been underway within the Department to revise that order since 1986.

Chairman GLENN. Why are they revising it?

Mr. FULTZ. Internal DOE studies have shown that the order is not effective, and certainly I think the results of our review would substantiate that.

Chairman GLENN. Do you have an estimate of how many visitors went through these labs during this long revision process?

Mr. FULTZ. Given that the revision has taken about 2 years, it would probably be close to 40,000 visitors at all DOE laboratories.

For the three particular laboratories included in our review, it would be about 8,000 in the 2-year period.

Chairman GLENN. Do you believe the security of these labs was fully protected against possible intelligence collection during that period?

Mr. FULTZ. No, we do not, sir.

Chairman GLENN. GAO's study identifies some very disturbing cases, I must say. Let me just cite a few involving visitors with suspected ties to foreign intelligence services who visited our nuclear weapons labs.

One visitor was allowed access to a weapons lab for a multi-day visit without any indices check. A few months after this visit, this visitor was discovered to be connected with a foreign intelligence service.

Another visitor came to a lab for one day with no notification of DOE and no prior indices check, and a subsequent check again found the visitor was linked to a foreign intelligence service.

One visitor went to two labs over a single week. One lab requested no indices check. The other lab did request one, but it arrived 2 months after the visit.

Another one: Three individuals seeking nuclear weapons development information were allowed into the labs on several occasions and DOE never got any indices check for one of them, got the check for the second visitor 8 months after the visit. DOE denied access to the third, but the person visited with lab officials off-site and was allowed into another Federal non-DOE facility.

Can you give us more details about these specific cases? Can you tell me, for example, whether these agents came from communist-controlled or other sensitive countries?

Mr. FULTZ. In an open hearing, I cannot give any more detail on these cases because I would be getting into classified information. However, I can say that the visitors did come from either a communist or a sensitive country.

Chairman GLENN. Can you tell us which labs they visited?

Mr. FULTZ. The cases which you have just described have incorporated all three labs in our review.

Chairman GLENN. Okay. You said in your statement that you did not know if classified information had been compromised as a result of these visits, but you indicated that GAO has little confidence that such information is being adequately protected.

Let me ask you, comparing what you knew before this study with what you have found since, would you say that chances are more or less likely that information was compromised?

Mr. FULTZ. Given the significant weaknesses in DOE's program and the breakdowns that occurred, I would have to say that it would be more likely to have occurred than not to have occurred.

Chairman GLENN. Many of the visitors from communist and other sensitive nations gain access to these labs, but let me cite some numbers from your report on the extent to which these visitors are screened.

Of the 38 1-week to 2-year assignments of communist visitors to the labs, indices checks were not performed, as I understand it, for 82 percent of those cases, is that correct?

Mr. FULTZ. That is correct.

Chairman GLENN. Checks were completed before the visit in only one instance?

Mr. FULTZ. That is correct.

Chairman GLENN. Of the 138 shorter-term visits by communist nationals, no indices checks were done for 64 percent of those cases, is that correct?

Mr. FULTZ. That is correct.

Chairman GLENN. And checks were completed before the visit on only five cases. You said in your report that three Soviets visited one nuclear weapons lab for the purpose of discussing inertial confinement fusion and laser isotope separation, a technology being developed for uranium enrichment. Can you expand on that case?

Mr. FULTZ. Yes, I can. In fact, I would like to refer to some documents that illustrate some of the points that we are trying to make here this morning, sir. In March of 1987, Livermore officials—that is one of the laboratories that we reviewed—requested that three Soviet officials be allowed into Livermore to discuss inertial confinement fusion research. Again, this is not classified; this is in an open document.

The justification for this visit—and I would like to quote from the memo which Livermore wrote as the reasons why they thought this visit should occur. "The visit of three individuals"—and I would prefer not to name the individuals—"will provide Livermore scientists with an unparalleled opportunity to obtain firsthand a sense of the direction of the Soviet science, especially in the field of lasers and laser fusion."

The memo also says, and I think this is important, "Some of the visit will occur in a Q area," which is a classified area, but it said all discussions will be unclassified.

In reviewing the request, the San Francisco operations office of DOE modified—it thought it was modifying what the Livermore officials wanted to do, and I would read from this memo which is dated June 5th, 1987, which says, "In view of the programmatic and security approvals, please be advised that I plan to modify the laboratory security plan so as to limit the visitor's access to only public areas," and these would not be Q areas or classified areas.

But when we reviewed the host report or the post-visit report of this visit, we saw some disturbing information. First of all, although the visit was justified on the basis of having the United States learn what the Soviets were doing in this particular science, the visit occurred over a 2-day period, at which time, by my count, 12 to 13 meetings were held, at which time the presenters at this meeting were laboratory officials and not the Soviet officials.

In fact, according to the agenda which I have before me, only about a 2-hour period was allotted to the Soviet visitors to present their views. And what is most disturbing is that according to the agenda, a significant portion of this meeting did occur in the Q area or the classified area which the San Francisco office was supposed to have ruled out.

Chairman GLENN. Okay. Now, this was for the communist visitors?

Mr. FULTZ. This was the three communist visitors, yes.

Chairman **Glenn**. Okay. Now, I understand the record is even worse for visitors from other sensitive countries. Can you give us some examples of that?

Mr. **Fultz**. Yes. Of 637 visits, DOE only required background checks for 77. However, of these 77, only 14 were received prior to when the visit occurred; 46 were not received at all and, as I recall, 17 were received either during the visit or after the visit had occurred.

Chairman **Glenn**. Does a person wanting to visit a lab just write to the lab and say I want to visit the lab and talk about so-and-so, and I would like to visit on a certain date, and they show up at the front gate?

Mr. **Fultz**. Sometimes, it happens on a very short notice. In fact, we had one example where a visitor just showed up one day and said I would like to come into the lab. But, generally, the visits are of a longer term, set up sometimes months in advance—and the lab personnel request permission to have the visitor come into the lab. It is really a mixed bag, sir.

Chairman **Glenn**. Are they set up through embassies, or is this just a direct request usually by an individual?

Mr. **Fultz**. Sometimes, the State Department will send a visit up.

Chairman **Glenn**. But, usually, more than often not it is just an individual request to come to the lab and speak to certain people, is that correct?

Mr. **Fultz**. Yes.

Chairman **Glenn**. Well, I understood of 32 visitors from other sensitive countries—Brazil, India and Israel—not a single background check was ever done, and of the 45 visitors who came on longer assignments, up to two years, checks were done on only one-third before the visitors' arrival. Is that correct?

Mr. **Fultz**. That is correct.

Chairman **Glenn**. Do you have any figures on how many of those people would have been turned down if the indices checks had been completed prior to the visits?

Mr. **Fultz**. It depends on what the background checks would have shown. I think what is important here is that the people were let into the laboratories without the benefit of DOE knowing their backgrounds. They did not know what facilities they were involved in in their countries. They did not know the status of the countries and where they stand in nuclear weapons development. That is the important issue.

DOE allowed these people into the facilities without knowing information which we believe they should have been aware of.

Chairman **Glenn**. I do not want to just continue on case after case. I think we have pretty well substantiated what the situation is, so I am more interested today in finding out a little bit more about the process that has allowed so many visitors to gain access to the labs without adequate checks being made.

What is DOE's rationale when you talk to them about why these checks are not completed prior to the visits and why people are not turned away at the gate if the check has not been completed?

Mr. **Fultz**. Well, I can tell you what DOE told us. Basically, they said there is, in many cases, not enough lead time to do the necessary checks. They also told us that the intelligence agencies—in this case, it would be the FBI or the CIA--take too long to perform the background checks.

They also told us that the background checks were really not a fool-proof method of keeping people out of the laboratories or identifying people that should not be allowed into the laboratories. They told us that security plans are their major control item when people come for the visits.

Chairman GLENN. Now, tell me about what their so-called "security plans" are. If they are letting people in that are not cleared—and we do not know whether they are even communist agents or not sometimes—then what is their security plan for containing this? That is security plan, in quotes; that is the title of their plan, right?

Mr. FULTZ. Yes, it is.

Chairman GLENN. What is that supposed to do, because it is my understanding on security plans that only 35 percent of the required security plans are, in fact, prepared and submitted to DOE? Is that correct?

Mr. FULTZ. That percentage is correct, yes. We found a substantially large number of plans were not prepared. What these plans essentially do is lay out what is supposed to occur during the visit. It is supposed to say who is to escort a particular visit, identifies locations within the laboratories that are to be visited.

And if there are classified information or classified meetings underway, or activities underway in the labs, then these classified meetings are supposed to cease during certain times of the visit. So it is a very important document.

Chairman GLENN. But are these plans supposed to be submitted in advance and approved, or do they just make them up on the spot?

Mr. FULTZ. Yes, in advance.

Chairman GLENN. And you are saying that only 35 percent of those were, in fact, prepared, submitted and approved?

Mr. FULTZ. When needed, that is correct.

Chairman GLENN. Well, my questioning time is up for now. We will have another round.

Senator Bingaman.

Senator BINGAMAN. Thank you, Mr. Chairman.

Let me just get straight, if I could, Mr. Fultz, the distinction you are making here between classified information and sensitive information. I guess you have talked about sensitive countries and communist countries, and I think I understand that distinction.

The distinction between classified information and sensitive information—could you go over that again for me?

Mr. FULTZ. Sure. The type of information we are talking about is basically unclassified. However——

Senator BINGAMAN. What do you mean "basically unclassified?" Is it classified or is it not classified?

Mr. FULTZ. It is unclassified.

Senator BINGAMAN. It is unclassified.

Mr. FULTZ. But DOE studies have shown that certain unclassified information can pose a security risk. Vulnerability reports which DOE itself has prepared and which we have reviewed—they are very classified documents. DOE would not give us copies of these documents, but we did review the vulnerability reports which DOE has prepared and they clearly show that foreign countries, if they are involved in weapons-related information and are so inclined, can learn important secrets from unclassified information.

Much of this nuclear weapons development program has commercial applications. I will give an example. Some cameras are used in the nuclear weapons program to more or less monitor, to take pictures of what happens during a nuclear fission process. But these cameras also have applicability to the commercial sector, so it is a gray area, sir.

Senator BINGAMAN. But I guess what I am asking is are you disagreeing—are you here suggesting that the decision by the Department of Energy as to what to classify is erroneous? They should classify more than they have classified. Is that what you are saying?

Mr. FULTZ. No. What we are saying is that the Department should prohibit visitors to the unclassified areas that really do not have a reason to be there or are from a country that might be in a further stage of weapons development than what we would like to see, or perhaps we certainly do not want to aid in that development. That is what we are trying to say.

Senator BINGAMAN. So you are not saying they should classify more information than they are presently classifying. You are saying that they should not permit questionable visitors to the unclassified areas of the lab or questionable visitors to have access to unclassified information in the lab. Is that what you are saying?

Mr. FULTZ. That is correct, and the example that I stated earlier regarding the three Soviets, they were in a classified area according to the host visit report.

Senator BINGAMAN. On page 26, you cite—I think this is a quote here—six foreign nationals from Israel and India visited or were assigned to various laboratories to conduct research or discuss theoretical astrophysics. That is one of the examples, I guess, that you have cited of an area that is not classified but that you do not think it is proper to have these visitors at the labs inquiring into.

Mr. FULTZ. I will have Mr. Schulze respond to that question.

Senator BINGAMAN. Is that correct?

Mr. SCHULZE. The point we want to make—we are not saying it is improper, but we want to make the point that DOE needs to scrutinize what is going on. Astrophysics is a basic science; it is a branch of astronomy, but it relates to the chemical and physical nature of celestial bodies, stars.

DOE's own documents state that astrophysics is closely related to the physics of nuclear detonations. So because of the close link, in situations dealing with astrophysics, for the people coming into the laboratories, DOE should scrutinize the person coming in based upon our non-proliferation policy and the specific activity the person is going to be involved in, and to make a decision, a policy decision, as to whether we want to allow that person to participate in that activity or not.

Senator BINGAMAN. Agreeing with what you are saying, is there a case to be made that we should also concern ourselves with visits by foreigners to Princeton and Cal Tech and the University of

Maryland? I understand those are the three leading institutions on astrophysics in the country.

Mr. SCHULZE. That is true, but the thing about the weapons laboratories is these individuals are having access to people who are also astrophysicists, but also are involved in nuclear weapons development. You cannot control the discussions that occur. Could the people over-step the bounds and start talking about something that is directly related to nuclear weapons?

Senator BINGAMAN. I claim no expertise in science, but my understanding is there are sort of ongoing, all the time international conferences on various fields and areas of science, and we send a great many of our people to these. There are conferences, for example, on theoretical astrophysics, and there are conferences on other things.

Should we have stricter limits on our people going to those? I mean, it is the same situation you are describing at the labs. There is always the danger that somebody who is knowledgeable both on astrophysics and on weapons development could get into a discussion with someone that should not occur.

Is that a real danger? Do we have problems here, too? Should we not be sending people to these conferences?

Mr. FULTZ. As Mr. Schulze mentioned, if these individuals are also connected with the DOE weapons laboratories and nuclear weapons development of this country, then I think they should be made aware of the consequences of openly discussing this information with certain foreign countries or visitors or people in foreign countries that might be working in sensitive facilities within the sensitive countries that we are concerned about.

We are not saying limit discussions, but what we are saying is making sure that the people tied in with the nuclear weapons development program understand the consequences.

We do this ourselves whenever we give our top secret clearances to government officials. I myself have been given the Q clearance briefing by DOE before I obtained access to DOE facilities and DOE classified and top secret information.

Ms. KRUSLICKY. Senator Bingaman, if I might just add to what Mr. Fultz has said——

Senator BINGAMAN. Yes, go right ahead.

Ms. KRUSLICKY. I think the issue that you have raised about the social contact between our scientists and scientists of foreign countries when they attend international conferences is an area that is of real concern to the Department of Energy.

We have been told both by laboratory people, by field office people, and by headquarters officials that this is an area where they do have some concerns in. It might be a question that you might like to follow up with them.

Senator BINGAMAN. Okay. Let me ask about inertial confinement fusion because that is an area that—I think when I say there are conferences on different subjects, that is one that they have a lot of conferences on.

Are you suggesting that this is an area—I guess some of the research in inertial confinement fusion is classified, some of it is not, is that correct?

Mr. FULTZ. That is correct.

Senator BINGAMAN. And you are suggesting that allowing people into the labs to discuss inertial confinement fusion has put at risk our classified information. Is that your conclusion?

Mr. SCHULZE. Well, no. The point we are making there is that is a technology that DOE itself has specifically identified as sensitive. DOE itself is saying inertial confinement fusion is sensitive because of its direct relationship to nuclear weapons.

Senator BINGAMAN. Right.

Mr. SCHULZE. We cannot in this forum get into detail on that. But, again, the point on inertial confinement fusion, as with any technology, is there is an unclassified side, there is a classified side.

If we are going to have people come into our laboratories to talk about this on an unclassified basis, we need to ensure that we are as a country, as DOE itself, wants to have this occur, and to ensure that they are going to discuss items that will not be of security concern to us.

Senator BINGAMAN. As I understand it, we send our people to Moscow to meet on issues of inertial confinement fusion, is that not correct?

Mr. SCHULZE. I believe we do.

Senator BINGAMAN. Do you think that also raises a serious problem? I mean, if it is dangerous for us to let them into our labs, it should be at least as dangerous for us to go over there or send our best people over there to discuss this.

Mr. SCHULZE. What I can discuss is what I have been told from DOE. When people go over there, they are thoroughly briefed beforehand about that situation.

Senator BINGAMAN. And you are concerned that our people who are meeting with Soviets here in our laboratories may not be thoroughly briefed?

Mr. SCHULZE. That is possible.

Mr. FULTZ. Well, what we would like to see is if we are meeting with people from the Soviet Union or any of these sensitive countries, then the Department of Energy ought to be aware, again, of their backgrounds, what facilities they work for, and what the particular dangers of sharing certain types of information are.

Senator BINGAMAN. You have said, I think, in your initial statement that—the Sensitive Subject List, I believe is the phrase you used——

Mr. FULTZ. Yes.

Senator BINGAMAN [continuing]. Needs to be added to.

Mr. FULTZ. Yes.

Senator BINGAMAN. What should we add to it? What is not now—we have got classified information, we have got sensitive subjects; that is a separate list. And you are saying that the list of sensitive subjects needs to be longer.

Mr. SCHULZE. Yes, it needs to be expanded.

Senator BINGAMAN. What should be added to it that is not already either classified or sensitive?

Mr. SCHULZE. I can best discuss examples. DOE has made up a document which they call the Nuclear Explosives List.

Senator BINGAMAN. The Nuclear Explosives List?

Mr. SCHULZE. Right. It details a number of technologies which relate to nuclear weapons, but there are technologies that are out on the open market that the document itself has classified. But some of those items are not specifically identified through the sensitive technology list.

An example of that could be cameras; it could be high explosives. Certain high explosives are used in nuclear weapons, but those do not show up in the Sensitive Subject List.

Senator BINGAMAN. Mr. Chairman, I think it would be useful for us to get from the witnesses, if they could, a list, a comprehensive list of the subjects that they believe should be put on the sensitive list that, in fact, are not on the sensitive list because——

Mr. FULTZ. Sir, if I could add, we also met with people in the laboratories as well as the field offices, and they told us that they think this list needs to be expanded, also. Again, I would suggest that you ask the Department to provide those items which they think need to be included on this list.

Senator BINGAMAN. I think that would be a good idea, Mr. Chairman.

My time is up.

Chairman GLENN. Mr. Fultz, did you talk to the FBI about these visits, all the visits that are occurring without the necessary checks being completed?

Mr. FULTZ. We asked the FBI if we could have access to the checks which they conducted, yes, we did, sir, as well as the CIA.

Chairman GLENN. What did they say? Did they cooperate with you?

Mr. FULTZ. The FBI cooperated, I would say, a very great deal, sir. They took the information that we asked, went through their files and made sure they did not have any classified information on it, and then let us see what information they provided to the Department.

Chairman GLENN. Now, a lot of information that puts a nation on these lists or not on the list, or identifies certain people who should or should not be gaining access to the labs, would come from foreign sources.

Did the CIA cooperate?

Mr. FULTZ. Regretfully, the CIA did not cooperate, sir.

Chairman GLENN. Why did they not? Why did they choose not to? Did they tell you?

Mr. FULTZ. They essentially told us that we could not see the background checks which they performed by the Department because, "the information contained sources and methods of intelligence and they would rather we not see that."

We asked them if they would review the documents, as the FBI did, to extract that type of information. Certainly, we would not want to disclose in a public forum sources and methods, so we asked the CIA if they would exclude that information, and they refused.

Chairman GLENN. DOE, in addition to what we have termed in quotes, "security plans," a while ago, calls the—they have a so-called primary mechanism, is that correct?

Mr. FULTZ. That is correct?

Chairman GLENN. What do they refer to when they say the primary mechanism for clearing foreign visitors is, in fact, being used?

Mr. **FULTZ**. The security plan.

Chairman **GLENN**. That is the plan that you talked about?

Mr. **FULTZ**. Yes.

Chairman **GLENN**. That is the plan where only 35 percent of the required checks were made in advance of the visit?

Mr. **FULTZ**. That is correct.

Chairman **GLENN**. DOE maintains a classified list of facilities in other non-communist countries that possess nuclear weapons-related capabilities. That is the so-called Watch List, correct?

Mr. **FULTZ**. Yes, it is.

Chairman **GLENN**. Would you describe the origin and purpose of that Watch List?

Mr. **FULTZ**. The Watch List was developed by Defense Programs to aid the Commerce Department in making export decisions on nuclear weapons material. In essence, what this Watch List does is identifies facilities in sensitive countries that are involved in nuclear weapons development activities.

The Department of Energy provided this list to Commerce to help it screen export requests for nuclear-related information which DOE needs to make approval on.

Chairman **GLENN**. Why does DOE not provide the field offices with that Watch List? You said a little while ago people make representation directly to the lab; they would like to come and visit. And as I understand it, that Watch List is not even provided to the labs, is that correct?

Mr. **FULTZ**. Well, quite frankly, the labs were not even aware that the list existed when we checked with them, and the reason that DOE told us they did not disseminate this list to the field offices was that they needed to control dissemination of it and they did not feel that the officials making these decisions needed to have the information on this list before referring cases to headquarters for review.

Chairman **GLENN**. Also, according to what you said earlier, two-thirds of the people were not even cleared by headquarters for a visit to the lab.

Mr. **FULTZ**. That is correct.

Chairman **GLENN**. So there was no check made on the Watch List at all of the list that is put together?

Mr. **FULTZ**. That is correct.

Chairman **GLENN**. Back to the FBI just a second, did the FBI give you any expression of what they thought of the security of DOE procedures? The FBI is involved with security all the time. What do they think of this?

Mr. **FULTZ**. Mr. Schulze will respond to that question.

Mr. **SCHULZE**. They did not—and we did not ask them directly to—give us an overall assessment of DOE's procedures, but they did say we were at liberty to say one additional thing. They said as of one week ago, a senior FBI official has been assigned to the Department of Energy to work in the area of counterintelligence.

Mr. **FULTZ**. That is all we can say in an open hearing, sir.

Ms. **KRUSLICKY**. The other thing, Mr. Chairman, that was pointed out to us by FBI officials was they felt it would be amenable to the Department of Energy to take random samples of their visitors and run those through the background or indices checks.

They did not feel it was a good procedure not to do that. They thought it might enhance the overall oversight of DOE if they would on a random basis at least send some people through for background checks to the FBI.

Chairman **Glenn**. As I understand it, this Watch List is provided to the Commerce Department by DOE, is that correct?

Mr. **Fultz**. That is correct.

Chairman **Glenn**. What rationale do they have if they provide it to the Commerce Department and not to their own field people where the requests are coming in for visits to the labs?

Mr. **Fultz**. As best I can tell, sir, they felt they did not want to disseminate further information or further disclose of this list. Perhaps, again, that is a question that DOE could explain.

Chairman **Glenn**. How well is that Watch List used even at headquarters?

Mr. **Fultz**. Well, again, International Affairs, to our understanding, was not aware of this list either.

Chairman **Glenn**. They were not even aware there was such a list?

Mr. **Fultz**. That is our understanding, sir.

Chairman **Glenn**. So even that one-third that was cleared through headquarters on their security plan was not even probably checked against the Watch List, as far as we know. Is that correct, or we do not know that they were checked against the Watch List?

Mr. **Schulze**. We do not know.

Mr. **Fultz**. We do not know.

Chairman **Glenn**. Do we have a figure for how many visitors from these Watch List facilities were allowed to visit our labs?

Mr. **Fultz**. Yes, we do. Again, I will refer to the charts. The one closest to me identifies the sensitive countries, and we examined 637 of these visits and we found about ten percent—actually, I believe the figure was 65 visits—came from countries on the sensitive list that were on the Watch List.

Chairman **Glenn**. And it would be true then, as I understand it, that under existing guidelines, there were no background checks or no security plan developed that were required for any of these visitors, is that correct?

Mr. **Fultz**. That is correct.

Chairman **Glenn**. Well, just for example, under the current rules a Pakistani nuclear weapons scientist visiting a non-secure part of a U.S. nuclear weapons lab does not need a background check, even if he intends to discuss what DOE defines as a sensitive subject, is that correct?

Mr. **Fultz**. Yes.

Chairman **Glenn**. As I understand it, too, DOE has identified certain sensitive facilities in other countries, and visitors from these facilities go to our nuclear weapons labs to discuss particularly sensitive technologies. Yet, DOE does not pre-screen the visitors, is that correct?

Mr. **Fultz**. That is correct.

Chairman **Glenn**. DOE has identified—on the Sensitive Subject List, they have identified 18 subjects that they term sensitive, is that correct?

Mr. FULTZ. Yes. That is the Sensitive Subject List which we referred to earlier.

Chairman GLENN. Yes. What are some of the things included on that list? Can you give us some examples?

Mr. FULTZ. Well, basically, it is technologies that concern developing special nuclear material or weapons testing and development items related to nuclear weapons.

Chairman GLENN. How many of the foreign visits that you were able to check involved these sensitive subjects? Is your count and DOE's the same on that, or how many of the foreign visits involved sensitive subjects?

Mr. FULTZ. We examined 818 and we found that DOE had identified one as including a sensitive subject.

Chairman GLENN. How about your count?

Mr. FULTZ. We used basically the same procedures and identified an additional 37 visits that were of a sensitive nature.

Chairman GLENN. Did DOE know about all these visits?

Mr. FULTZ. No, they did not. In fact, they knew about 15 of the visits because the visitors were from communist countries, but they were not aware of the other items.

Chairman GLENN. Well, then, because of the few cases that DOE reviewed, they did so because the visitor came from a communist country rather than because a sensitive subject was to be discussed, is that correct?

Mr. FULTZ. That is correct.

Chairman GLENN. If the visitor had not come from a communist country but came instead from another sensitive country or a third-party country, then DOE may not have reviewed any, is that right?

Mr. FULTZ. I would assume so; that is correct.

Chairman GLENN. It is difficult to see how this can happen. It seems to me that since the DOE order lists these subjects, all people have to do is look at the list to see that something is sensitive. They have developed their own sensitivity list.

Does DOE not provide some guidance or training on interpreting this list to their people out in the field or at the labs?

Mr. FULTZ. DOE does provide guidance to the field offices. We asked the field offices what they thought of that guidance and they said they did not think it was adequate.

They also said that some of the people reviewing the requests do not have the technical expertise to make these determinations. Again, they also mentioned improper training or lack of training on making these determinations.

Chairman GLENN. My time is up.

Senator Bingaman.

Senator BINGAMAN. Thank you, Mr. Chairman.

You have up here 675 total visits to sensitive countries on your chart.

Mr. FULTZ. Yes.

Senator BINGAMAN. Are any of those repeat visits?

Mr. FULTZ. Some may be, yes.

Senator BINGAMAN. You did not go through and check or eliminate those that are repeats?

Mr. FULTZ. No. We could do that for you if you would like.

Senator BINGAMAN. I think that might be useful. I do not know how extensive that is, but I think it would give us a clearer picture of how much. For example, let me just ask on another issue, El Salvador is listed there. They had 51 people visit Sandia Laboratory either in 1986 or part of 1987.

I guess my concern is why is El Salvador a sensitive country. What are we concerned about there? Do we fear that they are going to develop a nuclear bomb?

Mr. FULTZ. I would rather not answer that in an open hearing.

Senator BINGAMAN. So the reason that they are a sensitive country is classified?

Mr. FULTZ. Well, we could be getting into some information that I would be glad to talk with you in a closed hearing or a briefing with you and your staff that are cleared, but——

Senator BINGAMAN. Let me ask again on the issue of how much we should list as sensitive rather than unclassified. We have had a lot of testimony here on export controls, and there the thrust of the testimony in this Committee has been that we restrict too many things. I can remember Richard Pearle testifying that he thought Apple Computers ought to be on the list that we do not permit the export of because it could jeopardize our security.

You are suggesting that we take the list of sensitive technologies and lengthen it. I understand that the National Academy of Sciences—Lou Allen headed a panel there where he urged just the opposite, that we shorten the list.

We get into a real philosophical argument about how much you can really protect meaningfully, and if you try to protect everything you do not protect anything kinds of arguments.

I would be interested in your comments on that. Are we in danger of—you know, we have got what we call classified, and I can understand that, but you are not suggesting we increase the number of subjects or the amount of information that we classify?

Mr. FULTZ. That is correct.

Senator BINGAMAN. You are saying that the other category, sensitive, needs to be lengthened and we need to have better controls on access to that. Do you have some concern that we could get so much in that sensitive area that we cannot meaningfully protect anything?

Mr. FULTZ. In this particular field, I do not think that would be the case. But, again, I would refer to even DOE internal studies which have shown that unclassified information, if given to the right people involved in the right activities, can cross the barrier into classified data.

We have reviewed several DOE studies, and we would be glad to provide you with copies—in fact, one comes to mind, a 1983 study which DOE contracted out. It interviewed people within the laboratories, people within its field offices, who told the contractor that they believed that sensitive information and, in some cases, classified information had gotten to the wrong people as a result of these unclassified visits.

We have seen and read vulnerability studies which the Department of Energy has prepared and they clearly show that there is a link. What we are suggesting is that the information not be totally restricted, but making sure we know who we are giving it to, what facilities they work for, and what countries they come from.

Senator BINGAMAN. Now, did I just understand you to say that you do have information that classified material was given to foreign visitors? Is that what you just said?

Mr. FULTZ. The contractor report that I referred to mentions that DOE people have been concerned, and some perhaps still are concerned, that we are giving too much information of an unclassified nature which might be used in a classified setting.

Senator BINGAMAN. Did you go behind that report and talk to the laboratory people who were interviewed to find out if there were instances of classified information?

Mr. FULTZ. The study did not identify individuals; no, we did not.

Senator BINGAMAN. And you do not have information about classified information being released?

Mr. SCHULZE. We attempted to get that kind of data.

Senator BINGAMAN. But you were not able to?

Mr. SCHULZE. We were not able to.

Senator BINGAMAN. You were not able to because you concluded it did not exist or because they did not cooperate with you, or what?

Mr. SCHULZE. No. Well, as discussed in Chapter 1 of the report, if there are any ongoing investigations of espionage or of security concern dealing with foreign nationals' access to the laboratory, that will all be referred to the FBI, and the FBI does not discuss any ongoing cases. So that door was closed to us.

Senator BINGAMAN. Do you know if there are cases like that that were referred to the FBI?

Mr. FULTZ. We cannot comment.

Senator BINGAMAN. But you have no information that classified information did, in fact, go, other than this DOE report. Is that what I understand? There was a DOE internal report——

Mr. FULTZ. Other than the vulnerability studies, which DOE let us read but would not give us copies, no.

Senator BINGAMAN. Okay. Let me try to understand how the list of sensitive countries was put together. Did you get into that as part of your report?

Mr. SCHULZE. Yes.

Mr. FULTZ. Yes. There is a total of 68.

Mr. SCHULZE. Yes, including the communist countries.

Senator BINGAMAN. Who decides that? Who puts that list together and who updates it?

Mr. SCHULZE. DOE.

Senator BINGAMAN. The Department of Energy does?

Mr. SCHULZE. Yes.

Senator BINGAMAN. Now, that is different from the Watch List?

Mr. SCHULZE. Yes, sir.

Mr. FULTZ. Yes.

Senator BINGAMAN. The list of sensitive countries has 68, and the Watch List, how many does that have?

Mr. SCHULZE. We cannot divulge. That is a classified document.

Senator BINGAMAN. Now, what is the Watch List again? Just clarify that for me.

Mr. SCHULZE. The Watch List identifies—the Nuclear Proliferation Watch List is the formal title and it identifies facilities in certain countries that are proliferation-risk countries, that we believe are involved in sensitive activities.

Senator BINGAMAN. So it is not a list of countries; it is a list of facilities within countries?

Mr. SCHULZE. Facilities, yes.

Mr. FULTZ. Right, in countries.

Senator BINGAMAN. Okay. Now, are all the communist countries on the sensitive country list?

Mr. SCHULZE. Yes. All the communist countries are one group. The other sensitives are a separate group.

Senator BINGAMAN. Are the two groups treated differently for purposes of—I mean, what is the practical consequence of being on the communist country list and not being on the sensitive country list?

Mr. SCHULZE. The controls DOE places are a lot stronger on communist country visitors than they are on visitors from other sensitive countries.

Mr. FULTZ. There are some who disagree with that, but——

Senator BINGAMAN. But it is similar, I guess. In the area of the information itself, we have got the classified information and the sensitive information, classified subject to much stricter controls than sensitive, and you are saying that the list of communist countries—visitors from those countries are treated much more strictly, or at least theoretically that is the way it is supposed to work.

Mr. SCHULZE. Yes, right.

Mr. FULTZ. I would say theoretically, yes.

Senator BINGAMAN. Yes. You say it has not worked that way?

Mr. FULTZ. We found significant weaknesses throughout the entire system. I would suppose, then, from that that it would not be as strong as they are supposed to be.

Senator BINGAMAN. Okay. Now, is the procedure essentially the same for clearing people from communist countries and from sensitive countries?

Mr. SCHULZE. Again, the——

Senator BINGAMAN. I mean, if it is followed.

Mr. SCHULZE. It depends upon the situation of what the person is doing. If somebody is going to a secure area, the procedures are the same.

Mr. FULTZ. That person could be from a sensitive country or a communist country. If they are going to a secure area, then certain procedures have to be followed.

Senator BINGAMAN. But if they are not going to a secure area, if they are just coming to the lab to attend a conference on a nonsensitive subject, are the procedures the same for clearing visitors?

Mr. SCHULZE. No, no. The way it is implemented, DOE would still do background checks on communist visitors, still require a security——

Senator BINGAMAN. But not for visitors from sensitive countries?

Mr. SCHULZE. No.

Mr. FULTZ. But, again, as an example that I quoted from earlier, when I walked through the requests for visitors from the Soviet Union, the field office thought it was amending the visit such that the visitors should not be included or would not be in any Q or sensitive area.

But the agenda for that meeting which did occur—the host report states that the visitors were in that Q area. So, obviously, sometimes that does not work either, sir.

Senator BINGAMAN. But are there any hard and fast rules? For example, communist country visitors cannot get in Q areas. Is that one of the rules?

Mr. SCHULZE. No.

Senator BINGAMAN. There is no hard and fast rule?

Mr. SCHULZE. No.

Senator BINGAMAN. Thank you, Mr. Chairman.

Chairman GLENN. Thank you.

That would be developed as part of the security plan, I trust, is that right?

Mr. SCHULZE. Yes, that would.

Mr. FULTZ. That is correct.

Chairman GLENN. But two-thirds of the plans were never put into effect when the visitor was at the lab, wherever it was.

Mr. FULTZ. That is right; of our sample, that is correct.

Chairman GLENN. Let me just clarify one thing on your sensitive country visitor list over here, too. There was a question raised about El Salvador, and that is fine. I wondered the same thing when I saw El Salvador on the list, but this list is not your list. This is a list that DOE made up as to their judgment on what the sensitive countries are.

Mr. FULTZ. Clearly, this list is made up by DOE with consultation from the State Department and intelligence services.

Chairman GLENN. So whether there is a scientist in El Salvador or some place or it is being used as a transfer point for information or equipment or whatever, El Salvador, by DOE's estimate, is on the list as a sensitive country?

Mr. FULTZ. That is right. It is quite possible that a scientist from one of these countries on the sensitive list could be involved with a country on the communist list.

Chairman GLENN. Okay. Back to my previous question on guidance that is given to the labs out here by DOE headquarters, lab officials who develop nuclear weapons still believe that they need guidance concerning the activities covered in their particular area, is that right?

Mr. FULTZ. That is what the field office staff told us, that is correct.

Chairman GLENN. I would think that most of those people, the weapons designers themselves, would have a pretty good idea of what is sensitive and not sensitive and not have to have any guidance. But if they have to have guidance, how about the non-technical people that have access and do work in some of those sensitive areas? It seems to me that they would need a great deal of guidance, if we even have to give guidance to the design people themselves.

Mr. FULTZ. I would agree with that.

Chairman GLENN. How comprehensive is that Sensitive Subject List? Can you give me any examples of other weapon-related subjects that are not explicitly listed?

Mr. FULTZ. Mr. Schulze can again——

Chairman GLENN. Fine.

Mr. SCHULZE. I discussed it with Mr. Bingaman earlier.

Chairman GLENN. Okay. That would be the same list there?

Mr. SCHULZE. Yes.

Chairman GLENN. Okay. How many of the foreign visits dealt with those particular subjects?

Mr. FULTZ. Of the items which we think should be on the list?

Chairman GLENN. Yes.

Mr. FULTZ. Fourteen.

Chairman GLENN. Were any of those visits particularly noteworthy?

Mr. SCHULZE. I believe so, sir. If you would like, I would like to discuss two of them.

Chairman GLENN. Can you give us examples of those?

Mr. SCHULZE. Yes, sir. I found in one instance a foreign national from Israel came into one of the laboratories to work on the detonation of a certain insensitive high explosive. Again, this was never sent in to DOE for any review. The interesting thing about this is this insensitive high explosive pretty much has one use, and that use is in nuclear weapons.

In a different case, again, a citizen of Israel came in in astrophysics and DOE documents related to that state that the work he was going to do relates very much to nuclear weapons phenomenology and, in fact, his work has definite benefits to the nuclear weapons branch and that is why they wanted him in.

Chairman GLENN. Were there any special precautions taken? What type of special precautions did DOE take to ensure that these visits did not endanger national security or conflict with our nuclear non-proliferation goals?

Mr. SCHULZE. None, other than the standard procedures. In fact, in these cases I found no host reports, no security plans, no background checks.

Chairman GLENN. Well, we want to get on to the next panel shortly here. I think it would be easy for people to conclude that GAO is advocating that we should somehow restrict the numbers of foreign visitors who come to our national labs for research purposes. Is that your recommendation?

Mr. FULTZ. No, we are not suggesting that. What we are saying is that a proper balance needs to be struck between disseminating the information that is discussed in the labs, but making sure that nuclear weapons-related information and the security of the United States is not compromised during these visits.

We are not suggesting that visits be restricted. What we are suggesting is that the Department of Energy needs to be aware of who is coming to the labs, what backgrounds they have, what facilities they work for, and in the case of sensitive countries, where a particular country is in the development of nuclear weapons.

Chairman GLENN. Well, that would be my view, also, and I feel very strongly about it. I do not object to foreign visitors at all, but I object very strongly to letting them into the labs before any check is even being done of what their background is, whether they are a security risk, who the people they see might be.

I want to see cooperation in the nuclear area. We have guaranteed that, as a matter of fact, under our NPT agreements with—some 137 nations, I think, are on that list now. We have said we will cooperate with them, and they have quite legitimate concerns and can be briefed on these concerns about peaceful uses of nuclear energy at some of our labs where they have done specific work in certain areas they might be interested in.

But to just say that anybody comes in and we only are checking about a third—35 percent, by your figures—of the people coming in and having a completed security plan before they visit, and the labs say, well, this takes too much time and the people are there waiting at the front gate and it just takes too much time, I just do not see that.

We should tell them not to come until the clearance is ready—that is the way to handle it, to me. You tell them they do not arrive until we have their clearance in hand. You do not just try and accommodate everybody that shows up and may be living outside the gate for a day or so and think it is too much to ask them to wait until their clearance gets there.

I think you have laid out a very good case for it this morning. You have provided us some very disturbing information, very disturbing to me; I know that.

Are you aware of any visits or assignments that are currently underway where individuals from nuclear weapons facilities in sensitive countries are gaining access to our weapons labs?

Mr. FULTZ. If I could make a caveat before we respond, sir, all the information which we have discussed this morning is based on documented facts, reports, analyses, document visits that we have obtained from the Department, from its field offices, or in some cases the laboratories. Everything that we have said here this morning is documented.

We have heard of a recent case which I would like Mr. Schulze to explain. We have not seen documents related to that case. We have been trying feverishly for the last 2 days to obtain documents to substantiate, but we have confirmed what we will be telling you with two or three different sources throughout the Department.

But, again, at this point we do not have documents to substantiate it, but Mr. Schulze can tell you and we are at liberty to discuss from a classified standpoint what we can say.

Chairman GLENN. Okay, fine. Mr. Schulze.

Mr. SCHULZE. The incident, as we understand it—two Israeli visitors wanted to come to one of the laboratories to discuss or to be working in detonation of explosives, high explosives. DOE headquarters, both International Affairs and Defense Programs, denied this particular visit.

Chairman GLENN. They did what?

Mr. SCHULZE. Denied it. They said no, this visit cannot occur because of the subject.

Chairman GLENN. Who said that they could not——

Mr. SCHULZE. DOE headquarters, Defense Programs and International Affairs.

Chairman GLENN. Said the visit should not occur?

Mr. SCHULZE. Should not occur.

Nevertheless, the two individuals both came to the laboratory and, instead, one is working in his host's garage. The other individual is working at a subcontractor location and is still working on the subject which DOE headquarters asked that they not work in.

A lot of this is still unsubstantiated, but there is belief that one of them is using a personal computer to access a main frame, a Cray, an unclassified Cray, inside the laboratory.

Additionally, they were not supposed to be in any lab buildings, but DOE happened to call the host at his office and this foreign national answered the phone. So something is still going on. That is about as much as we know.

Chairman GLENN. Is computer access from outside the lab fence—can you access computers on the labs that way or are they then split down into classified and unclassified sections, or how does that work, because that would mean that anybody could get on the phone right here in Washington, D.C., and access the lab? You would not have to be in a garage outside the gate.

Mr. SCHULZE. I am really not the person to ask that, but in this situation I believe this particular Cray does nothing but unclassified work, and I think that can happen. We have an example in the report we discussed where that happened. Another individual that DOE denied still came, visited his host, and with his host they accessed, again, the Cray computer, unclassified Cray computer, inside the laboratory.

Mr. FULTZ. We understand that the host in this particular case gave the foreign national his access code, which enables then that national to access the unclassified computer.

Chairman GLENN. Is that prohibited by DOE or lab regulations that you give someone else your access code?

Mr. SCHULZE. I cannot answer that.

Mr. FULTZ. I do not know.

Chairman GLENN. Do you know?

Ms. KRUSLICKY. No, we do not know, Mr. Chairman.

Chairman GLENN. My time is up.

Senator Bingaman.

Senator BINGAMAN. On this Cray computer that was accessed, you say it was an unclassified Cray computer?

Mr. SCHULZE. Yes.

Senator BINGAMAN. There are classified Cray computers and there are then unclassified Cray computers, is that right?

Mr. SCHULZE. Yes, sir, as I understand it.

Senator BINGAMAN. And what you are suggesting is that this foreign national, through whatever set of procedures, wound up accessing one of the unclassified Cray computers?

Mr. SCHULZE. Yes, sir.

Senator BINGAMAN. And you say this is information you have obtained from the Department of Energy, but have not been able to independently verify?

Mr. SCHULZE. We have been told; we have been asking for documentation to support that.

Senator BINGAMAN. I guess what concerns me is if this occurs as you describe it and the Department of Energy knows about it enough to be advising you of it, why do they not stop it?

Mr. SCHULZE. I think that is a question you will have to ask DOE, sir.

Senator BINGAMAN. We have a chance in the next panel, I guess, Mr. Chairman.

Chairman GLENN. We sure do.

Senator BINGAMAN. That is all the questions I have.

Chairman GLENN. Thank you.

That is all I have, too. Thank you. We appreciate your work on this and the other areas of security and of safety concern that you have done from GAO on behalf of the Committee at our request, and you have done an outstanding job in these areas and we appreciate your continuing good work.

Thank you very much for your testimony this morning.

We may have additional questions as we review the record this morning or as other members wish to submit questions since they were not able to be here this morning, and we would appreciate your rapid response to those so that your views could be included in the full Committee record.

Thank you very much.

Mr. FULTZ. Thank you.

Mr. SCHULZE. Thank you.

Ms. KRUSLICKY. Thank you, Mr. Chairman.

Chairman GLENN. Our next witnesses this morning are from the Department of Energy: Richard A. Du Val, Deputy Assistant Secretary for Operations, Office of Defense Programs, and Richard Williamson, Acting Deputy Assistant Secretary for International Affairs, Office of International Affairs and Energy Emergencies.

Gentlemen, welcome this morning. Mr. Du Val, if you will lead off with either a full statement or a summarized version, as you see fit, in either event the full version will be included in the Committee record, and would you introduce everyone there at the table?

TESTIMONY OF RICHARD A. DU VAL, ACTING DEPUTY ASSISTANT SECRETARY FOR OPERATIONS, OFFICE OF DEFENSE PROGRAMS, U.S. DEPARTMENT OF ENERGY,[1] ACCOMPANIED BY RICHARD WILLIAMSON, ACTING DEPUTY ASSISTANT SECRETARY FOR INTERNATIONAL AFFAIRS, OFFICE OF INTERNATIONAL AFFAIRS AND ENERGY EMERGENCIES,[1] AND CHARLES GILBERT, DEPUTY ASSISTANT SECRETARY FOR SECURITY AFFAIRS

Mr. DU VAL. Thank you, Mr. Chairman. Let me introduce Mr. Richard Williamson, the Acting Deputy Assistant for International Affairs, on my right, and Dr. Charles Gilbert, the Deputy Assistant Secretary for Security Affairs Office of Defense Programs, Department of Energy, on my left.

I have a brief statement, Mr. Chairman, I would like to read which I think addresses a number of the points that have been raised by Panel I.

Chairman GLENN. Fine.

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[1] See p. 61 for the prepared statement of Mr. Du Val and Mr. Williamson.

Mr. Du Val. I appreciate the opportunity to appear before you today to discuss the Department of Energy's Visits and Assignments Program for Foreign Nationals. We recognize the Committee's longstanding interest in non-proliferation policy and the management of sensitive information.

I will briefly summarize those aspects of the Department of Energy's Visits and Assignments Program as requested by your letter, and I am prepared to discuss these and other matters as you may desire.

The Assistant Secretary for International Affairs and Energy Emergencies is responsible for the overall management of the Visits and Assignments Program, and for developing the Department's policies in this area.

The Assistant Secretary for Defense Programs is responsible for the security and sensitive technology aspects of visits and assignments, and determines the guidelines and procedures to implement the security aspects of the program.

Both of these assistant secretaries are involved with reviewing specific requests for visits and assignments that require headquarters approval. DOE field elements, its national laboratories, and other research and development facilities, conduct day-to-day program activities that include approving most visits and assignments and providing necessary security.

Now, while we have not had the opportunity to review in any detail the final GAO report—and may I add, Mr. Chairman, your embargo was successful with regard to the Department of Energy. I received my copy this morning.

Chairman Glenn. But this was discussed with your people, as I understand it.

Mr. Du Val. We have the benefit of the findings of fact and we had the benefit of a quick look at it yesterday, yes, sir. My only point is that we are on a little short notice on that.

We have reviewed those findings of fact and we have recommended a number of changes to the GAO investigators as a result of that discussion.

Chairman Glenn. But the point I was making a second ago is I believe this was discussed with some of your people back when the GAO report was in preparation. They did not give you a final copy of it.

Mr. Du Val. We saw only, as I understand it, sir, the statement of facts, but that is what was discussed with us.

Chairman Glenn. All right.

Mr. Du Val. We have not seen the recommendations until—we saw them yesterday and we have them today here.

Chairman Glenn. Okay.

Mr. Du Val. The GAO review covered operations from January 1986 to September 1987, and focused on policies and procedures which the Department recognizes are inadequate. Over the last year, we have taken numerous actions to strengthen our Visits and Assignments Program. We believe these and other planned activities will address the major GAO concerns, but we certainly stand ready to make other adjustments that might be necessary to ensure the Visits and Assignments Program adequately balances the programmatic benefits of visits and assignments with our national security responsibilities.

The Department considers the use of international cooperation and collaboration as an important element in many of our programs. Accordingly, it is our policy to support an active program of unclassified visits and assignments by foreign nationals to DOE facilities. These visits and assignments are conducted consistent with both DOE programmatic and security policies.

Approximately 20,000 foreign nationals visit or are assigned to DOE's facilities each year. Of these, the vast majority involve foreign nationals from non-sensitive countries at non-weapons laboratories to work on unclassified energy-related areas. As such, these are not sensitive.

A relatively small number of these foreign nationals, approximately 600 per year, are from sensitive countries and visit or are assigned to our multi-program weapons laboratories at Sandia, Lawrence Livermore, and Los Alamos.

While these laboratories have major responsibilities for classified nuclear weapons activities and for other sensitive but unclassified operations, they also have a wide array of non-sensitive programs.

For example, Los Alamos is responsible for a range of activities from the most sensitive nuclear weapons work to operation of its Clinton P. Anderson Los Alamos Meson Physics Facility, a totally unclassified user facility open to scientific personnel from throughout the world.

Such diverse activities present a particularly difficult challenge at the weapons laboratories in balancing the benefits of international collaboration with the obvious need to protect our personnel, facilities, classified information, and sensitive technology.

There is continuing interaction between the Department and other agencies to support the Visits and Assignments Program. While normal scientific collaboration among scientists and other program personnel is ongoing, we work with the intelligence community to help us identify potential security risks presented by visits and assignments.

Information from the intelligence community is a factor considered in determining whether to approve a visit or assignment. Other important factors, such as the benefit of the visit or assignment to our scientific advancement, the subject to be discussed, the sensitivity of the facility involved, and the adequacy of security plans, are also considered.

The Department has been working for some time to improve the Visits and Assignments Program. Over the past year, many areas for improvement have been identified and we are currently pursuing a vigorous program to strengthen the program.

Chief among our recent accomplishments—in August of 1988, the Department issued a new Visits and Assignments policy statement. This policy guidance clarifies responsibilities of secretarial officers and field elements, outlines a process to streamline approvals, stresses the need for improved headquarters oversight, and emphasizes improved headquarters policy guidance to field elements.

Mr. Chairman, I would like to provide a copy of this policy statement for the record.

Chairman **Glenn**. It will be included in the record.

[The policy statement follows:]

POLICY STATEMENT FOR UNCLASSIFIED VISITS AND ASSIGNMENTS OF FOREIGN NATIONALS TO DEPARTMENT OF ENERGY FACILITIES

The Atomic Energy Act of 1954, Section 3, provides for "a program of International cooperation to promote the common defense and security and to make available to cooperating nations the benefits of peaceful applications of atomic energy as widely as expanding technology and considerations of the common defense and security will permit." Additionally, other more narrowly drawn legislation encourages or requires active international collaboration. As a result, virtually every Department program has an element of international cooperation which often results in exchange of scientific staff.

It is Department policy to facilitate visits and assignments of foreign nationals to perform unclassified work at DOE facilities and sponsor foreign assignments and visits by DOE supported technical personnel in order to achieve significant, equitable, mutual benefits from international cooperation. While these exchanges are encouraged, any such exchanges of personnel must comply with pertinent restrictions on dissemination of unclassified sensitive information. They must also assure that there is no loss of classified information attributable to the specifics of the visit. The risk of loss of classified information is of particular concern at locations which perform both classified and unclassified research. Foreign visits and assignments must be consistent with policies related to the transfer of technology of both national security and potential commercial value.

The decision to use international exchange of technical personnel as an element of program strategy is a responsibility of the Program Secretarial Officer, who will be responsible for promulgating appropriate programmatic guidance to the field. Extraordinary costs associated with mitigation of risk or compliance with pertinent restrictions shall be approved and borne by the sponsoring program office.

The involved Program Secretarial Officer and those Headquarters elements (e.g., ASIE for foreign policy considerations) which are responsible for matters that impact on either the decision to pursue international exchange of personnel as a program strategy or the approval of a particular visit or assignment will be consulted and are responsible for timely advice. Arrangements for certain sensitive visits and assignments must be subject to extraordinary control with national security as the primary consideration. Therefore, the head of the responsible DOE field element will confer with the Assistant Secretary for Defense Programs, sufficiently in advance of such a visit or assignment, to establish any special security arrangements that may be necessary.

Based on the above guidance, the head of the DOE field element responsible for the facility concerned shall (1) approve or disapprove the visit or assignment, (2) ensure that all applicable regulations and guidelines are followed, and (3) provide adequate protection for national security concerns including DOE and DOE contractor personnel, facilities, classified and sensitive information, and technology.

The guidelines and process for providing advice and reaching the determination that pertinent requirements have been satisfied shall be contained in a DOE Order which shall be developed by the Assistant Secretary for International Affairs and Energy Emergencies.

Mr. DU VAL. The Department is obtaining approval for the final version of its new DOE Order on Visits and Assignments. This Order addresses the need to effectively weigh programmatic benefit against the complexities of assuring that sensitive information and technology are protected.

The new Order also emphasizes improved security measures by establishing standardized requirements for security plans, procedures for better identification of sensitive technologies and sensitive facilities, and it requires more involvement by responsible program officials at all levels of the approval process. The new Order also requires more specific reporting requirements, on-site reviews, new training programs, and an annual report to the Secretary of Energy.

Over the last year, DOE headquarters has improved the process for tracking and reviewing sensitive visits and assignments. In October 1987, the Department took steps to speed up the process of completing indices checks by allowing field offices to initiate their own requests directly with the intelligence community. We expect this to speed up the process. We are also automating indices check requests, which should help to significantly reduce response time.

We recognize that people working in our weapons laboratories represent our first and best line of defense in protecting sensitive information and technology. In January of 1988, Defense Programs produced and distributed video tapes to sensitize our personnel about the technology security aspects of visits and assignments and foreign travel. The video tapes are being used by DOE and its contractors to improve security awareness.

Mr. Chairman, I would like to provide copies of these video tapes for the record as well.[1]

Chairman GLENN. Fine, good. They will be in the record.

Mr. DU VAL. In February of 1988, we initiated a program to improve non-proliferation and technology security awareness through on-site briefings at the three weapons laboratories. Representatives of other Federal agencies have assisted DOE and DOE contractor personnel in making these presentations.

During the last 6 months, DOE headquarters has worked with the field offices and the weapons labs to develop improved security plans that address both physical and technology security.

In July of 1988, a seminar to train weapons laboratory representatives on how to improve pre-foreign travel briefings for laboratory travelers was held, which included significant emphasis on hostile intelligence activities.

With the cooperation of the intelligence community, we recently held a 2-day seminar for senior managers of the weapons laboratories and DOE field and headquarters elements on the hostile intelligence threat. This session sensitized senior managers about the nature of the hostile intelligence threat in relation to the Visits and Assignments Program. We plan to hold another seminar later this month.

Each of our three weapons laboratories has taken other actions to improve security awareness among all those individuals, particularly our scientists and technical people, who are involved in collaborative efforts with foreign nationals. These actions include lectures, special presentations dealing with security matters, as well as briefings related to specific visits and assignments and foreign travel.

Currently, the Department is developing new implementing guidelines as a follow-on to the August 1988 policy statement and the soon to be published Department Order on Visits and Assignments.

As part of this initiative, we are establishing training programs to assure that DOE policies, authorities, responsibilities, and procedures for all DOE and DOE contractor personnel involved with the Visits and Assignments Program are clearly understood.

We are also taking action to assure that field elements are better able to identify and evaluate visits and assignments which may involve sensitive subjects. Improvements in policy, process, and procedures for the Visits and Assignments Program at DOE facilities is only one element of an ongoing DOE initiative to improve access controls generally across the national laboratories.

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[1] See p. 394 and p. 420.

Mr. Chairman, that concludes my statement. I will be happy to answer any questions that you or other members of the Committee may have.

Chairman GLENN. Thank you very much.

Are you aware of this computer case that we just had testimony on a few moments ago being accessed from somebody's garage offsite at one of the labs?

Mr. DU VAL. Yes, sir. I became aware of that in the last several days.

Chairman GLENN. Why have we let that go on? Has it been stopped, I guess would be the first question.

Mr. DU VAL. Yes, sir, it has been stopped and the visitors that were involved with that are not only not in the city, they are not in the country. It raises——

Chairman GLENN. Are the people that did that that gave a security access number to a foreign national to use in a way like that—are they still employed?

Mr. DU VAL. We have asked our Albuquerque operations office for a report on that. All we have is a preliminary report. My understanding is this is preliminary now—that the host did not give his password and ID number. He dialed it up for his visitor.

It is important to recognize, as you were getting at earlier, that there are unclassified computers within the laboratory that are partitioned from the classified, and so I want to make sure that that point becomes clear. You cannot, in fact, from Los Alamos City or Washington dial into a classified computer.

That does not, however, change the fact that we provided a service without intending to, and we now are entering into what I guess is the interesting area of electronic visits from outside the fence.

Chairman GLENN. Have we had cases like that before?

Mr. DU VAL. I am not aware of cases like that before, but I would not want to bet we did not.

Chairman GLENN. Okay.

Mr. DU VAL. It is obviously an area that we are going to have to focus on because, clearly, it is no longer a matter of whether the visitors are inside or outside the fence with regard to the protection of information.

Chairman GLENN. On these security plans, both Defense Programs and IE officials told GAO that security plans serve as the primary foreign visitor control mechanism. Is that correct?

Mr. DU VAL. Yes, sir.

Chairman GLENN. If so, then why did the field offices prepare only 35 percent of those required?

Mr. DU VAL. I think that the difference between what you have heard us say and what you have heard the GAO say rests on what a security plan is. All three of the weapons laboratories have a very active security department under the cognizance of the Department's security operation.

All of those laboratories have a baseline security plan, a generic plan for how they protect classified material and classified nuclear material and sensitive information. All those plans are constantly in effect.

When we talk about a security plan for a visit, what we are talking about is a tailored plan for extraordinary precautions because of some particular reason or sensitivity. That is over and above a baseline plan.

I think it is important to recognize access to one of our weapons laboratories is not access to classified information. We have a very rigorous access control program and a very rigorous need-to-know program within the laboratory.

Chairman GLENN. I understand that, but I also think you would not have these security plans and require them unless you think they are important, is that correct?

Mr. DU VAL. That is correct, and you——

Chairman GLENN. Then why are people allowed into the labs without the security plan being completed?

Mr. DU VAL. That is a breakdown in the system that we have already moved to correct. That is a deficiency in the system that we recognize, as the GAO has recognized.

Chairman GLENN. What have you done to correct it?

Mr. DU VAL. We have included in our appraisals this past year with the field offices a special item with regard to emphasizing security plans, and we have insisted that security plans are required for all foreign visitors and assignments.

Chairman GLENN. Are they not permitting people in the front gate right now unless a security plan approval has been obtained from headquarters prior to the visit?

Mr. DU VAL. I cannot tell you right now, but I can tell you, sir, that as a result of the new Order that is about to come out, that certainly will be the case, and I——

Chairman GLENN. Mr. Du Val, you just told me we have been correcting this over the past year. That is a very simple question. Are people cleared or are they not cleared to get into the lab? That is very straightforward and it seems to me you would know the answer to that one.

Mr. DU VAL. I can assure you that the laboratories are sensitive more than ever now to this matter.

Chairman GLENN. I am not talking about sensitivity. Are people getting in the front gate today without security plans being in place? That is the question.

Mr. DU VAL. There are security plans at all laboratories prior to any foreign visitor coming in. I can make that a factual statement, sir.

Chairman GLENN. Absolutely, nobody is getting in now unless a security plan is approved, is that correct?

Mr. DU VAL. Yes, sir. The fact is that is not clearance, however, and I want to make sure that I am not in some way answering a different question than you are asking.

Chairman GLENN. No. I was addressing it just the way you addressed it. I was trying to take it on as though the labs have some valid, non-classified visitors that they require a security plan, because we are concerned that they might get over into some other areas and get into other things.

So they are given an escort, they are given a plan. They are deemed to be enough risk that we set up a security plan for them.

Mr. Du Val. We set up an appropriate security plan for the level of risk, the nature of the contact, and the location they are in. They are not all the same. For some, the generic baseline plan would be sufficient; for others, special plans need to be tailored, sir.

Chairman Glenn. The time period covered in 1986 and 1987 of this report now, we had two-thirds of the visitors that were supposed to get a security plan clearance before they came through the front gate that did not get that kind of plan, and you are telling me all those two-thirds now that were being ignored before or because the lab just deemed that it took too much time to go through it—they would let them in anyway—that that has now been corrected and we can be assured today, right here now, today, that nobody is coming in the front gate unless they have an approved security plan, is that correct?

Mr. Du Val. I can best make the statement this way, Mr. Chairman. We have directed our operations offices to be sure that for sensitive visits to sensitive facilities, those plans, whatever the level of appropriate security plan, have been approved and are in place. That is a statement that has——

Chairman Glenn. Well, for——

Mr. Du Val. For sensitive visits to sensitive facilities.

Chairman Glenn. All right, but how about some person who is a "sensitive" person who is on those control lists—if those people are permitted in and they say they are coming in for strictly non-classified purposes, but we still deem those people as being a hazard from a security point and we submit a security plan for those people, is that correct?

Mr. Du Val. It is going to continue to be as appropriate to the situation. We have the baseline plan that is always there. The security operations at all laboratories have been very thoroughly tested, particularly over the last few years, to ensure that we do not have any holes in the system.

You can rest assured that is there first and foremost, and then additional plans are provided as——

Chairman Glenn. Over the last several years includes the time period when GAO ran this study that you have sat here and listened to this morning and that you have a copy of now, albeit you just got it yesterday, I understand.

But when you say for several years, that includes that same time period. You certainly would not say that that time period the security checks have been adequate, would you?

Mr. Du Val. No, I am not going to take that position, but I would like to clarify that I believe what the GAO is referring to in their statistics is extraordinary plans that were submitted to the Operations Office for approval.

Chairman Glenn. Do you let people in that are subject to this indices check, individuals for which an indices check is requested? Do we let anyone into the labs now without having that completed indices check on hand? Is that in effect today?

Mr. Du Val. No, we do not have a requirement like that. The indices check is a request from the law enforcement and intelligence community for background information that they may have in their possession. It is by no means a clearance, and I think it confuses the issue to refer to it as a clearance.

Chairman Glenn. But the reason people are put on that and have that and have that indices check requirement is because we do suspect, we do have reason to believe that they are either foreign agents or that they have some ulterior motive in coming into the lab, or we would not have them on that list, is that not correct?

Mr. Du Val. That is correct, but we also have the assumption in all our operations that all our visitors are potential collectors of intelligence, hostile intelligence collection, and we have the baseline security system which controls access to sensitive information and areas at the weapons labs for all individuals who do not hold DOE security clearances.

Chairman Glenn. Well, I do not know whether I have a good feeling yet or not as to whether the people are being turned away at the front gate now unless they have an actual security plan in place approved by headquarters, which two-thirds of the people up to July of last year did not have for the 21-month study behind that time period.

All it needs is a very simple yes or no. Are they being turned away unless a security plan is in effect?

Mr. Du Val. Rather than in any way misleading this Committee, I will give you my assurance that we will provide within 24 hours the answer in terms of what is in effect now. I know what the directives say, I know what is intended, and I know what has been told to the people who are supposed to implement it. I do not want to go further than that without having some opportunity to check the system and see how it is being implemented and whether it meets both of our intentions.

Chairman Glenn. You must have known for several years, though, that the security plan, as required—that those security plans were not getting out there and that foreign visitors that were not cleared were getting into the labs for classified or unclassified purposes.

The system had taken too much time and the labs were letting them in because they could not get an answer, and the people were waiting in the local motel, apparently, and so they let them in.

You must have known for some period of time that that was going on. Why did you not stop that? That is just against all your own regulations.

Mr. Du Val. We have determined by our own review that that was the case, and we have been strengthening that system. I cannot tell you that it has stopped, Mr. Chairman. I can tell you that a lot of people are working a lot harder to make sure it does not happen.

Chairman Glenn. My time is up until the next round.

Senator Bingaman.

Senator Bingaman. Thank you, Mr. Chairman.

Mr. Du Val, do you know of instances where classified information—I am not talking about sensitive; I am talking about classified information—in the hands of the national laboratories has fallen into the wrong hands because of problems with these security procedures?

Mr. Du Val. I do not know of a specific instance relative to the Visits and Assignments Program, but I have no way of having an assurance of the converse—that it has not.

Senator Bingaman. You have no way of knowing for certain that it has not. It is hard to prove a negative.

Mr. Du Val. Yes, sir.

Senator Bingaman. But do you know of a positive? Do you know of instances where classified information has gotten into the hands of people who visited the lab that should not have gotten into their hands?

Mr. Du Val. Well, Senator, we are now entering into an area that is one which is really inappropriate to get very far into in an open hearing. I would be pleased to continue that line of questioning with you in private, in a closed session, or in any other way that you may deem appropriate.

Senator Bingaman. In connection with this instance that I guess Senator Glenn asked about that was alluded to earlier by the GAO witnesses of the two Israeli nationals, do you have information that any classified information was obtained by those Israeli nationals that should not have been?

Mr. Du Val. No, sir, I have no such information. What we are aware of from preliminary reports was incorrect the accessing of the unclassified computer, and in conflict with our rules, but I am not aware of any classified information being involved.

Senator Bingaman. What are your rules governing the accessing of your unclassified computers?

Mr. Du Val. Well, those computers, which represent a very powerful computing capability, are for program work that they were bought for. It is basically the appropriate use of program money to carry out the program. It is not for anybody else to use who is not authorized, so it is an unauthorized use of a capability and a facility that is government-owned.

Senator Bingaman. Do you see any security problem? I mean, is it just a question of an unauthorized use or is it also evidence of some kind of security problem that someone would use one of these computers?

Mr. Du Val. I think that somebody who accesses the computer using their own password and identification number legitimately and then turns its use over to someone that is not authorized to use it has created, in fact, a significant security problem, and I can assure you we will be following up on that.

Senator Bingaman. And by following up, you mean disciplining the people involved?

Mr. Du Val. Absolutely.

Senator Bingaman. I notice as part of this GAO report they have this DOE Order 1240.2 attached as Appendix II, or at least parts of it. You have got here the list of communist-controlled countries and the list of other sensitive countries over here. I wondered when was the last time that was updated.

Mr. Du Val. The sensitive country list is, I think, in the process of being updated right now because we are in the process of revising and re-publishing that Order, sir.

Senator BINGAMAN. When was the last time, though—I mean, I assume that this is current, the one they have included here is current as of today.

Mr. DU VAL. Well, the Order itself is dated 1981, but I am advised that the sensitive countries list was updated last year.

Senator BINGAMAN. It was updated last year. I guess the reason that I ask that is I notice Grenada is still on the list. I thought they were an ally these days and I thought we had—did we not solve that problem in Grenada?

Mr. DU VAL. Well, my understanding is there is a variety of ways you can get on that list and whether one is an ally or not is not necessarily the question. Let me ask Mr. Williamson if he can clarify in this hearing that question.

Mr. WILLIAMSON. The Sensitive Country List was reviewed last year as part of our approval process for foreign travel of U.S. nationals to other countries. That list was informally provided to all of the laboratories, which can be used for both foreign travel as well as for visits and assignments.

The update of the visits and assignment list will be incorporated in the new order which we hope to issue soon.

Senator BINGAMAN. But this is updated as of last year?

Mr. WILLIAMSON. The list that the GAO provided to you is the 1981 list.

Senator BINGAMAN. Oh, I see, but you have a more current list?

Mr. WILLIAMSON. Correct.

Senator BINGAMAN. This is not the current list?

Mr. WILLIAMSON. That is correct.

Senator BINGAMAN. I was also a little concerned; Nicaragua is on the other sensitive list, but not the communist-controlled. That is not administration policy, is it?

Mr. WILLIAMSON. You are looking at a 1981 list, not the updated list.

Senator BINGAMAN. OK. Some of the testimony from the GAO witnesses indicated that they felt and they believed that you felt that the list of sensitive technologies was not long enough, and that we should add more areas to that and control access to more sensitive information than we presently are. Would you agree with that?

Mr. DU VAL. I think that is an area we need to look at because I am inclined to think that it probably needs some addition. It needs to deal with evolving sensitive technologies, also, that we may not be able to precisely define.

It has to strike a balance between the export control and nonproliferation issues and our responsibilities under the Atomic Energy Act to share in the fruits of our research. So it is a tough question and it is a matter of judgment in a lot of areas.

My inclination is that we need to keep looking at it and keep it up to date, and my hunch is that it is probably a little deficient. But I do not, on the other hand, see a need for a large enlargement of it.

Senator BINGAMAN. I guess, you know, I was making the point in the earlier questioning about making the list so long that we really could not control anything, and if everything is classified, then nothing is classified.

Mr. Du Val. I share that concern.

Senator Bingaman. Do you have some problem with this whole business of having classified information and then having sensitive information? What is the difference in the treatment that you give to those two categories?

I mean, very frankly, the sensitive thing seems very subjective to me. Nobody is really willing to say what is in it and what is out of it. It is all fairly loose as to what procedures we use with regard to it. I would be interested in knowing if you have a clear notion of what we are supposed to do with sensitive technologies.

Mr. Du Val. Well, as I understand it, what we are really dealing with here is quite apart from national security information which is controlled under the classification program.

We are dealing with areas that are of concern because of export control or technologies or certain aspects of technology that are dual use—where we can have militarily critical applications and peaceful applications—and technologies that are advancing rapidly.

Now, having defined those three categories, I am inclined to agree with you that that is a very tough thing to elaborate a specific useful list that can be used to implement controls. I do not think that has been done well.

I share the comments that I have heard others make from the field that that is a hard thing to nail down. Classified information is very definite; it is or it is not. The categories under sensitive technologies are less so, and we need to work harder at being able to sharpen that up so that we can do what we are trying to do, which is limit the technologies that should be limited, but do it in a way that can be implemented. I would hope that our new Order does a better job of that than the one you have seen.

Senator Bingaman. I guess I am also a little concerned. You know, when we control exports—we have had a lot of hearings on that—we have this militarily critical technologies list, MCTL, and it is enormous; at least, that is what I am advised. I have never seen it, but I understand it is enormous.

I mean, is there any relationship to this? When they draw up this militarily critical technologies list, is it cross-indexed to your sensitive technology areas? I mean, is there a rationale that runs through this whole thing that make sense so that a person could look at something or could read an article and say this is something that we should not let somebody from Ethiopia see?

Mr. Du Val. It certainly should be. We occupy one chapter of that list. The list is basically a DOD list and we provide input to that document. It is used by the Commerce Department, along with the Watch List that has also been alluded to, as a source of information on export control.

Therefore, it ought to have a lot of similar features to it that we have been talking about in terms of our definition of sensitive technologies. Again, I think that is an area that does need to be sharpened up if we are expecting people to interpret these categories.

Senator Bingaman. My time is up, Mr. Chairman.

Chairman Glenn. Thank you, Senator Bingaman.

Can you define the indices checks for me? What is the definition of an indices check?

Mr. Du Val. Basically, it is a request to the law enforcement and intelligence community for any information they have on an individual.

Chairman Glenn. OK. Out of your DOE Order 1240.2, the definition there is the same. I will just read it here. "Indices Checks: A procedure whereby a check is made to the investigative and intelligence files of appropriate government agencies to determine whether there is information of record on a particular foreign national which may endanger national security interests." That is the definition of it.

We had the testimony of GAO that these indices checks were not even done. People were in the lab and eight months later the indices check came through. Of these clearances, some two-thirds of them never did get the clearance in before the visit had occurred and had ended.

This has resulted in a lot of things. Suspected foreign agents and individuals associated with facilities believed to be involved in nuclear weapons activities have obtained access to the laboratories without prior DOE knowledge. That is out of the GAO report, Chapter 2.

Foreign nationals, including those from countries suspected of developing nuclear weapons, have participated and/or discussed subjects related to nuclear weapons without appropriate DOE oversight.

I will skip a little bit over to a different page here. However, neither DOE headquarters nor the field offices' procedure require that the indices check results be received before approving visits or assignments by foreign nationals.

The GAO report said: "We found, however, that DOE and the laboratories request and receive only a small number of the required indices checks for visitors and assignees from communist and other sensitive countries. In addition, the majority of the checks that are performed are completed access to the weapons laboratory has occurred. If the 181 individuals from communist-controlled countries we received, 176 required indices checks, and for these individuals DOE obtained only 6 completed indices checks before the initiation of the visit or assignment, received indices data for 51 individuals either during the visit or after it had been completed, and did not obtain indices checks for 119 individuals."

The report added: "Similarly, DOE and the laboratories obtained few indices checks for individuals from other sensitive nations before granting access to a weapons laboratory. Of the 637 foreign nationals from other sensitive countries we reviewed, only 77, about 12 percent, were required to have indices checks under DOE's order and the field offices' requirements. Of the 77, only 14 were completed prior to the visit or assignment."

Now, there is concern because these people need a clearance or they should not be allowed in. Yet, we are just clearing them in willy-nilly because it takes a long time to get the indices check done, apparently.

I will just follow up on what I asked a little while ago. You know about this. Will you let anyone in the lab without a completed indices check on hand for those who are on the list for whom an indices check is requested? Is that in effect right now, today, so we can rest assured that indices checks will be completed before people get in the lab, whether classified or unclassified?

When they are on this list, as I understand the list, the indices list says there is supposed to be a check on them whatever they are coming into the lab for. Now, is that kind of restriction in effect now or is it not?

Mr. Du Val. That is not my understanding of our current requirement that all visitors have an indices check, or all foreign visitors. The problem is that an indices check simply indicates that we have no derogatory information. It is no basis to take any comfort that we are letting someone in that still may not try to do us harm or be after our secrets.

Chairman Glenn. No, but people are put on these lists because there is some question, and yet we clear them in without even running an indices check on them, right?

Mr. Du Val. In some cases, yes; in some cases, no. We have different requirements.

Chairman Glenn. As I understand it, in two-thirds of the cases back through the time period that was reviewed, the answer is yes, that they should have been checked and were not.

Mr. Du Val. I would have to look at that report much more closely before I could agree with that. In many cases, Mr. Chairman, indices checks were requested that were not required by the system. The Operations Office requested them anyway. That is a murky area that does need to be corrected.

Right now, I am advised that at Lawrence Livermore Laboratory all visits and assignments by communist-controlled country visitors require indices checks, and all assignments to Livermore, no matter what country they come from. That is a longer term than a visit.

Chairman Glenn. All right. They require indices checks, but are you requiring the indices checks to be done, completed, in hand, given a specific clearance for those people to come in before they are allowed in the lab?

Mr. Du Val. It will make no sense to have that requirement if we do not insist on that.

Chairman Glenn. Yet, in two-thirds of the cases where indices checks were made, we did not do that. We let them in the lab. They were completed. We have people that went back home again and their clearance had not come in yet eight months later. I just read the figures to you here about what the past performance has been.

Are they being let in the lab now or not? That is the question.

Mr. Du Val. Well, again, it is not a clearance. It is merely an indicator that we have nothing on them. The fact remains that we treat them all as if they are about to do us in in terms of security.

I cannot give you the flat answer because we do not have an across-the-board requirement that all visitors must have an indices check completed before they get in. I have held up the publication of the new Department Order so that we can look at it in light of the information that has been raised by the GAO and by the questions of this Committee, and to make sure that the kind of requirements that you and we think are required to do the job right are included in that Order.

Chairman GLENN. Let me narrow it down just a little bit, then. Instead of saying any visitor into the lab for whatever purpose, let me narrow it down to those who are getting into classified information.

Are we making certain that their clearance is there, that we have run this indices check, and it is being requested that it is being run before those people are allowed into the lab?

Mr. DU VAL. You are dealing——

Chairman GLENN. And they are coming in for classified material briefing, or whatever.

Mr. DU VAL. That question is—absolutely, we require that we have adequate clearance information on them and a need to know before they are allowed access to any classified material in any of our laboratories.

Chairman GLENN. Well, that is where the GAO report indicates that that has been lax, too. So you are saying that as of now, that has been corrected?

Mr. DU VAL. I am not aware the GAO was referring to classified material. I am aware of no instance where anybody got into the laboratory and had access to classified material that was not properly cleared and had an established need to know.

Chairman GLENN. Have there been any cases where a KGB agent was allowed to enter one of the labs and we did not know it was a KGB agent until after the indices check came in after he left?

Mr. DU VAL. I am sure there are.

Chairman GLENN. How many of those would you estimate we have had, or how many do you know of?

Mr. DU VAL. I do not know of any, but given the system we both are describing, that is very likely the case. The point, I think, that is important to recognize is our system assumes they are KGB agents. They are in on legitimate program business that has some benefit to this country and a technical exchange is being allowed under controlled circumstances.

Chairman GLENN. Well, how are we losing on that? Do you mean just the benefit of interchange of scientific information with other countries?

Mr. DU VAL. Which is a programmatic benefit to us. The chief criteria on both visits and assignments, Mr. Chairman, is that it is of value to our programs that we have those technical interchanges.

Chairman GLENN. Sure. I know that, and that is what I said a while ago. You probably heard me say it a little while ago that I favor visits. I do not favor any visit where somebody has some question about them and we let them into the lab before they have their clearance or before we have run an indices check on them, if that is what is required.

Mr. DU VAL. We have not followed our own procedures, and we are going to take steps to ensure that the procedures are revised to be appropriate and that they are enforced.

Chairman GLENN. Well, okay, that is reassuring and I hope you set about to do it. I do not understand why it has taken so long to do this. It is just amazing to me that people sit out there and they say we have these procedures, but we will let Vladimir in from some country or other before his clearance ever arrives.

We have the procedures there that are supposed to say they do not come in until they get the clearance, and yet we just clear them in, some two-thirds of them. I cannot understand how this has gone on year after year after year.

I am not sure I know quite yet where this whole system broke down, whether it was people at the labs who just took things into their own hands and said, "We are going to clear these folks in, they are here on our front doorstep and nobody will mind and nothing will happen and so we just let these folks in," or whether DOE headquarters was not riding herd on these people enough to make sure that this happened, because surely this practice has been known where some two-thirds of the people were being cleared in.

Now, is DOE not riding herd on these people or did they overstep the bounds on the labs on what their authority was to clear people in? Where did this break down?

Mr. Du Val. I think it is a little of all the above, Mr. Chairman. I think that the laboratories have not adhered to the rules that were intended. I think the operations offices did not provide the oversight in a timely fashion, and I think the Department headquarters operation did not provide the oversight and direction it should have. I think that there is enough there for everybody.

But I must stress again that for the system to work, first and foremost, we must depend upon the laboratory personnel and their judgment and their understanding of the threat every time they meet with anybody who has not got, to their knowledge, a security clearance.

That has to be our first line of defense. All these other procedures, I think, are all secondary to that. So our major campaign this past year that I have been involved with has been to raise the awareness of, and the understanding of, the laboratory senior management and staff as to the importance of being vigilant on those kinds of contacts, not just in the laboratories, but on their foreign and domestic travel as well.

Chairman Glenn. Well, that may be the first line of defense, but certainly the procedures for clearance back up that individual. You cannot leave security at these labs up to each individual scientist who may have met Ivan somebody at a meeting in Geneva and they got to be good friends and they drank vodka together.

They come back. Now, he comes out to Los Alamos or Sandia or some place. Here is my old buddy; I have him over to the home for dinner or something like that, and then we say, well, I am sure he is not interested in this and we clear him into the lab and we let him in before his clearance is even there.

So I do not agree that we just leave these up to the labs. The good sense of the people at the labs is certainly your first line of defense, but it seems to me it has to be backed up and you either have a security system or you do not. And it has obviously not been working.

I would quote out of DOE's 1987 foreign visitors study. This is paraphrased just a little bit: "The practice of allowing individuals into the labs without indices check results represents a significant risk and, because the indices data are not available, places DOE in a position whereby it does not take special precautions or denies a visit to an individual who represents some additional risk."

That same 1987 DOE study found that formal visitor requests seldom met required time deadlines. The study found, for example, "None of the requests for nationals of Iran, Israel, Pakistan, or South Africa arrived at IE within the prescribed time limits. In fact, the single Iranian request arrived eight weeks after the assignment had started, and under the current order none of these requests even required IE approval or DP review."

Mr. Du Val. That is a defect in the Order, and it is also a system that is bogging down in a bureaucracy that is not moving in a timely fashion. Those are two areas we are very much intending to correct with the new Order.

The other problem on the timeliness of indices checks—and we are as frustrated with that as you, sir—is we are hoping to improve that by installing an automated system with one agency that provides the information, and for allowing field requests directly so that we eliminate the headquarters loop.

We are looking at ways of streamlining the system so that we can get the responses back in a timely fashion, so that we can use those where it is appropriate to make judgments about people getting in or not.

Chairman Glenn. What we have apparently done in the past is where the system bogged down because there were too many requests or whatever, we just went ahead and let the folks in quite often.

Mr. Du Val. That does appear to be the case in many instances.

Chairman Glenn. It does, indeed.

On page 18 of the GAO report it stated that, "DOE officials told us that visits and assignments that may involve criminal and/or espionage activities are referred to the FBI."

Do you know whether there are any FBI investigations going on stemming from criminal and/or espionage activities associated with visits to the labs by foreign agents?

Mr. Du Val. Mr. Chairman, we have, particularly over the last several years, developed a very close working relationship with the Bureau. Any information relating to compromise or threat of our classified information is referred to them and becomes an active case of the FBI. It would be inappropriate for me to respond to that question in this hearing.

I would be pleased to discuss with you what our detailed relationships with the Bureau and other members of the intelligence community are and how we are improving that to make it even more effective.

Chairman Glenn. You cannot tell us whether there are any investigations going on now?

Mr. Du Val. By the Bureau?

Chairman Glenn. Yes.

Mr. Du Val. I am sure there are.

Chairman Glenn. Stemming from criminal activities or espionage activities with regard to the DOE plants that we are talking about here today, or facilities?

Mr. DU VAL. I cannot comment on that in an open hearing, Mr. Chairman.

Chairman GLENN. On page 19 the report also says, "We were unable to obtain any DOE reports of hostile contacts by foreign nationals. The November 1985 National Security Decision Directive 197 requires DOE and contract employees to report such contacts."

Can you tell us this morning if hostile contacts by foreign nationals have been reported by DOE and contractor employees since that directive went into effect?

Mr. DU VAL. Well, there is no centralized data base for collecting data on those contacts. I am aware of several instances where that might have been the case. The fact is that, again, anything like that is reported directly to the Bureau.

We plan to modify an Order on losses and violations to require establishing a central data base, though, so that we can collect information on hostile contacts and become more in compliance with NSDD 197.

Chairman GLENN. Well, who do they report such contacts to in the Directive 197? Do they not report to DOE?

Mr. DU VAL. It should be reported to a central point in DOE. That is being done up until now not in a centralized fashion. The information is——

Chairman GLENN. I do not care. Has anybody reported? That is my question. If so, where is it in DOE? It is required to be reported. I presume something that important would go right to the very top of DOE.

Mr. DU VAL. Reports of that matter are, in fact, reported to the Office of Safeguards and Security and to the Deputy Assistant Secretary for Security Affairs.

Chairman GLENN. And have there been such reports since that directive went into effect?

Mr. DU VAL. We are not aware of any specific reports in the near term.

Chairman GLENN. Would you, in the performance of your duties, be aware of that if there were such reports?

Mr. DU VAL. I would, indeed, and so would the gentleman to my left, who is responsible for security affairs.

Chairman GLENN. So we have not had any reports of any agent contacts at all with any of our contractors or with lab people?

Mr. GILBERT. Not to my knowledge. I have been in the job since November of 1987 and I have heard of no such contacts.

Chairman GLENN. Okay.

Mr. DU VAL. Mr. Chairman, before anybody takes a lot of comfort in that answer, however, the fact is that I think that there are a lot of interactions in the field with the FBI field offices where I think were there to be such contacts, that would be probably the channel up until now that has been used to report it on.

The fact that we do not know about it, I would hope, with our new system, will be able to be an important fact. Right now, I am not sure that that is authoritative.

Mr. GILBERT. Let me make one clarification of that. We have had no hostile contacts. There have been many contacts with Soviet and communist country nationals, of course, occurring in our system over the last year, at least, and we do have records of many of those.

Chairman GLENN. Do you have enough money and resources to do this job of ensuring security at the labs?

Mr. DU VAL. The Department has put a great deal of additional resources in the security of its national laboratories, nuclear weapons laboratories, over the past few years, as I am sure you are well aware.

I do not think resources are a significant issue in not doing this job better. I think what needs to be done is a clarification of the process and a strengthening of the oversight, and I think that will bring this system much closer to the one that we all want to see in place.

Chairman GLENN. Well, we have a DOE contractor study that was done for DP. Now, this was done back in 1983, so that is an old study now, but it was after your Department had a chance to get into this, and it reached the following conclusion.

It stated, "There is clear evidence that despite the increased emphasis placed on controlling technology transfer by the Reagan administration, the resources devoted to the DOE control program for these activities," referring to visitor control, "have been drastically reduced."

Now, you are saying that the resources are adequate, is that correct?

Mr. DU VAL. I am not aware that the issues, the problems that we have seen both in our analysis, and we did a more recent one in November of 1987, or what I heard from the GAO thus far points to a lack of resources.

Certainly, we will take a hard look at that, and maybe it is a matter of reallocating resources within our system and putting more emphasis in some of these key areas we have been talking about.

Chairman GLENN. That 1983 DOE contractor study reviewing the adequacy of DOE's foreign visitor controls reached the following conclusions: "The program at the present time is *little more than a paper-pushing exercise with little in the way of real technology transfer analysis and with little overall utility.* Witness the relatively small number of denials."

I guess we could go on with this and give many other examples, and so on, but I think it is obvious what the situation is. It is too bad—in fact, it is just tragic that it has gotten into this kind of a situation, as I see it.

I think this should have been evidenced at the labs and at DOE headquarters, the situation we were getting into. I just find it almost impossible to believe that we have people being cleared into the labs or being permitted to come into the labs who were thought to need a clearance or need a background check.

We were that concerned about them, and yet because it was bogged down in the bureaucracy that you talked about and the requests got to be so many that it was bogging down the system, instead of correcting the system, we just let people in. That is just almost impossible to believe.

So I think this is about 5 years belated. We obviously had very great concerns about this. My own concern about security at the labs, as I said in my opening statement, goes clear back into the Carter years when this Committee did some work on it when I was early on on this Committee.

You know, one thing that I also mentioned in my opening statement was the rumors we have heard from over at DOE headquarters that this somehow was politically motivated right now, and I hope we have disabused you of that this morning.

My efforts in this go back many, many years, and so any little rumors over there that this is politically motivated or that our concerns about Savannah River safety are politically motivated—I have been working on these matters ever since I have been in the Senate.

Mr. DU VAL. Those rumors never reached my ears, Mr. Chairman, and I would be the first to agree with what you have said.

Chairman GLENN. Well, thank you.

Mr. DU VAL. You have clearly been a supporter of our doing the right thing and been of assistance to the Department in those many areas, and I do not think what year it is has had anything to do with it.

I would like to reemphasize one point, at the risk of making what might be another statement, but a couple of points in my statement—we do recognize what you are saying. We have had our own review. We are going to take a hard look.

In fact, I have already discussed with the gentleman who testified from the GAO getting together and having a chance to look in more detail at the data he has so we can satisfy ourselves that we understand the problems that they discovered.

We are on a process of enhancing the security at the three weapons laboratories not just for visits and assignments. We are strengthening the personnel security requirements. We are strengthening access control. We are looking at a better employee and supervisor education program on the security threat.

We are coming at it in a lot of different ways, all recognizing the same points that you have been making—that we have to make sure we are not vulnerable, particularly in the area of visits and assignments. I suspect we are going to see more visits over the next few years.

I think there is a tendency when budgets do not grow in the internal programs to interact more at the international community level. Many of the visits that you have heard about are under international agreement between this country and a number of other countries and are for unclassified sharing of research.

So it is a real dilemma for us that we have to do a better job of managing, to balance, as we said, doing our responsible national security job along with meeting our responsibilities on the sharing of unclassified and unsensitive technology.

Chairman GLENN. Well, there is just one overriding concern, also, I would have just in closing, and that is that I think I am afraid some of the people may be coming down on the side of glasnost and perestroika maybe a little too much. Maybe they think some of the security needs that we had in the past are not quite as stringent as they used to be.

We now have a new period we are living through of INF and things like that, and everything is going better with the Soviets.

But there are a lot of things changing, but certainly our biggest deterrence is our nuclear weapons system complex and our capability in that area, backed up by the weapons complex, that has done a superb job, and I back them on that 100 percent. I have supported everything for those labs ever since I have been here.

But I just hope that nobody is letting down the gates out there and letting people in that could do us damage. International relations can reverse as well as go favorably, and we just do not want to see anything done at the labs that would—we do not want to see these kinds of things continue.

If there is one thing I have fought for all these years, quite often through what we call a "MEGO" type audience—"my-eyes-glaze-over" every time you talk about it—is nuclear non-proliferation to other nations around the world.

We have guaranteed these nations, in trying to get them to adhere to NPT and sign up and foreswear weapons development, that we in turn would at the same time try and work our nuclear stockpiles with the Soviet Union downhill so that some time we got control of this nuclear weaponry.

One hundred and thirty-seven nations have gone along with us, and we have said we will cooperate with them if they will foreswear nuclear weaponry. Now, we have a few nations that have not done that, have not joined NPT, and those are the ones that we find coming out to the labs and looking for information.

We know through other intelligence sources what some of the things are that are going on in those countries, and so we are very concerned about that. So that gets into this, too, whether we are really keeping true faith and allegiance to those people that we had sign up under NPT and that we encouraged to sign under NPT. Are we doing everything we can to prevent the spread of nuclear weaponry while they have foresworn it? So that is another issue in this whole thing.

We want to keep in touch with you on this. If there are additional resources and support that you need from here on Capitol Hill, I can guarantee you we will do everything we possibly can on this Committee to help you get that.

At the same time, though, I hope that you are moving as swiftly and as rapidly as you indicated this morning to make sure that this situation is being corrected. It is not a very pretty picture we have had outlined here this morning and it has to be reversed.

Thank you all for being here this morning. Thank you.

The Committee will stand in recess subject to the call of the Chair.

[Whereupon, at 12:22 p.m., the Committee was recessed, subject to the call of the Chair.]

APPENDIX

United States General Accounting Office

GAO Testimony

For Release
on Delivery
Expected at
10:00 a.m. EST
Tuesday
October 11, 1988

DOE's Foreign Visitor Program Has Major Weaknesses

Statement of
Keith O. Fultz, Senior Associate Director
Resources, Community, and Economic
Development Division

Before the
Committee on Governmental Affairs
United States Senate

GAO Form 160 (12/87)

Mr. Chairman and Members of the Committee:

We appreciate the opportunity to discuss the Department of Energy's (DOE) controls over foreign nationals who participate in unclassified activities at its three weapons laboratories--Lawrence Livermore National Laboratory in California and Los Alamos National Laboratory and Sandia National Laboratories in New Mexico. My testimony today is based on our report, Nuclear Nonproliferation: Major Weaknesses in Foreign Visitor Controls at Weapons Laboratories (GAO/RCED-89-31), which you requested and are releasing today, Mr. Chairman.

In summary, our work shows that DOE allows most foreign visitors access to the weapons laboratories with little oversight or approval. As a result, suspected foreign agents and individuals from facilities suspected of conducting nuclear weapons activities have obtained access to the laboratories without DOE's knowledge. We could not determine if sensitive or classified information has been lost, but because of three weaknesses in DOE's foreign visitor controls, we have little confidence that adequate protection of weapons-related information and technology is achieved. Specifically, we found that

-- DOE headquarters, field offices, and the laboratories generally do not obtain required background data on foreign visitors. Further, DOE has, but does not use, other available data to prescreen visitors from foreign facilities suspected of nuclear weapons-related activities.

-- DOE has little assurance that communist or other sensitive nations do not obtain sensitive information during the visits. DOE and the laboratories are not identifying those visits that involve the 18 subjects considered sensitive by the agency. In addition, DOE does not recognize a number of nuclear weapons research, development, and testing activities as sensitive information.

-- DOE does not have effective controls to approve, monitor, and report on foreign visits. Further, DOE has no integrated system to obtain and disseminate foreign visitor data that may be relevant to the field offices' access approval decisions.

We believe that these problems, when viewed in their totality, illustrate a dilemma that DOE has not effectively resolved. On one hand, the information and technology developed and/or used by the weapons laboratories have peaceful applications; therefore, DOE and the laboratories want to disseminate it as widely as possible. However, the information and technology also have a more sinister use--in the nuclear weapons arena. In our view, DOE does not have sufficient checks and balances in its foreign visitor controls to ensure that nonproliferation and security concerns are appropriately considered along with the need to advance scientific developments.

Before I discuss these weaknesses in greater detail, I will briefly describe the activities conducted at the weapons laboratories, DOE's controls over foreign access to them, and DOE's organization for managing the visitor program.

ACTIVITIES CONDUCTED AT DOE'S NUCLEAR WEAPONS LABORATORIES

DOE has a number of missions in energy, defense, and scientific research. To accomplish its missions, DOE has 9 multiprogram laboratories and about 30 specialized laboratories that perform fundamental scientific and applied research activities.

Although most of these facilities conduct unclassified, nonweapons activities, Livermore, Los Alamos, and Sandia perform a unique role for DOE: they conduct research and development functions for DOE's nuclear weapons program and conduct other classified activities related to defense and energy issues. For example, Livermore conducts classified research associated with the Strategic Defense Initiative and develops lasers for the inertial confinement fusion and atomic vapor laser isotope separation processes. Los Alamos conducts inertial confinement fusion and plutonium processing and fabrication research and supports U.S. arms control measures through foreign technology assessments and detection of nuclear explosions. Sandia develops weapons structures, aerodynamic shapes, and delivery devices and conducts engineering activities related to the design of electrical arming and firing systems.

CONTROLS OVER FOREIGN ACCESS TO THE LABORATORIES

Activities at these laboratories must meet the requirements established by the Atomic Energy Act as amended by the Nuclear Nonproliferation Act. This act establishes U.S. policy for controlling information and technology related to the development of nuclear weapons. It requires DOE to classify and control weapons information and prohibits its dissemination to foreign countries unless authorized by the President. The act also requires strong federal oversight and controls over any U.S. assistance to foreign nations that may directly or indirectly assist in the production of special nuclear material (enriched uranium and plutonium) or nuclear weapons.

However, the act also provides for international cooperation to develop the peaceful uses of nuclear energy. Because of DOE's involvement in peaceful nuclear technology and the unclassified nature of many activities that it conducts, foreign visitors are permitted access to the weapons laboratories. Between January 1986 and September 1987, about 6,700 foreign nationals visited the laboratories. Of these, 222 were from communist countries and 675 were from nations deemed sensitive by DOE because of proliferation, security, or other concerns (app. I shows the number of these visitors to each of the 3 weapons laboratories). We selected and reviewed the files for 181 communist and 637 sensitive country visitors.

To ensure that foreign nationals do not pose a security or proliferation risk, DOE Order 1240.2 (Visits and Assignments by Foreign Nationals, Jan. 5, 1981) establishes procedures to control access for unclassified purposes. The order provides that foreign access to the laboratories may be of concern if it involves any of 3 conditions: (1) a sensitive country--68 are identified, (2) a sensitive subject--18 are listed, or (3) a secure area--a location where classified information and equipment are available. If a visit meets any of these criteria, DOE must institute additional procedures, including background checks by investigative and intelligence agencies, access approval by the responsible headquarters or field office, security plans, and reports by the sponsoring organization (called host reports).

ORGANIZATION FOR MANAGING FOREIGN VISITOR PROGRAM

To manage the foreign visitor program, DOE uses a three-tiered approach that includes DOE headquarters, field offices, and contractors. The Assistant Secretary for International Affairs and Energy Emergencies has overall responsibility for the foreign visitor program, and the Assistant Secretary for Defense Programs is responsible for the security-related aspects such as initiating background checks and concurring in visits that involve access to secure areas. DOE headquarters has delegated significant aspects of program implementation to the field offices. These offices approve some visits, develop security plans, and ensure that the host submits the required report. In addition, the field offices have delegated certain responsibilities to the contractors that operate the laboratories. For example, contractor staff hosting a foreign visitor must provide reports to DOE.

With this background, I will now discuss the importance of controlling foreign access to the weapons laboratories and some of the problems that we found.

IMPORTANCE OF CONTROLLING FOREIGN ACCESS

It is widely believed that foreign nations try to obtain information and technology on U.S. nuclear weapons activities. DOE's nuclear weapons laboratories possess sensitive information that would be valuable to foreign nations, and valid concerns exist regarding the technology security at these facilities. DOE studies have concluded that unclassified information at the laboratories may provide foreign countries details on sensitive--and even classified--activities that the United States conducts. Although such concerns exist, DOE permits foreign nationals--including those from communist and other sensitive countries that DOE believes conduct nuclear weapons-related activities--to participate in unclassified activities at the weapons laboratories. DOE allows these visits as part of its international cooperation and technical exchange program. As a result, DOE tries to strike a balance between security concerns and its foreign visitor policy and has instituted management controls to reduce the risks associated with these visits.

PROBLEMS GAO IDENTIFIED

DOE's controls do not ensure that individuals who pose a security and/or proliferation risk are identified before access to the laboratories is granted. As a result, suspected foreign agents and individuals from facilities suspected of conducting nuclear weapons activities have obtained access to the laboratories without DOE's knowledge, thereby preventing DOE from taking special precautions or denying a visit. Although we could not determine if sensitive or classified information has been lost to foreign countries, we identified three weaknesses that affect DOE's ability to ensure the security of the weapons laboratories.

Little Review of Foreign Visitors

The first of these is DOE's limited review of foreign visitor backgrounds prior to the visit. DOE requires background checks for visitors from certain countries to the weapons laboratories. DOE primarily obtains these checks from the Federal Bureau of Investigation and Central Intelligence Agency. Of the 181 visitors from communist countries whose files we reviewed, 176 required background checks. However, DOE did not obtain these data for 119. DOE requested data on the remaining 57 but received the results for 51 either during the visit or after it occurred. We found several cases in which DOE allowed visitors with questionable backgrounds--including three suspected foreign agents--access to the laboratories before obtaining background data.

In addition, DOE obtained even less background information on visitors from other sensitive countries. Of the 637 visitors from proliferation-risk countries such as India, Israel, and Pakistan, DOE required background checks for only 77. DOE only received the results for 14 before the visit began. Further, DOE has developed a classified "watch" list that identifies foreign organizations suspected of conducting nuclear weapons activities. We found that about 10 percent of the 637 visitors were affiliated with these organizations, but DOE did not request background data for them.

Limited Identification of Potentially Sensitive Subjects

The second weakness is DOE's limited identification of potentially sensitive subjects, which results in DOE's allowing foreign nationals from communist and proliferation-risk countries into the laboratories to discuss subjects that could assist their nuclear weapons programs. DOE has identified 18 sensitive subjects; DOE headquarters must approve any visit that involves them. In our sample, DOE identified only 1 of the 818 communist and other sensitive country visits as involving a sensitive subject. We found at least 37 others related to inertial confinement fusion and isotope separation, which are identified as sensitive by DOE. It may be possible that other visits involved sensitive subjects, but we could not fully assess these from available documentation.

Further, DOE has not identified other activities related to nuclear weapons research, development, and testing as sensitive subjects. These include special cameras used to record the progression of detonations, astrophysics, and high explosives, which are used in testing nuclear weapons designs as well as in the weapons themselves. In our sample, 14 foreign nationals visited the laboratories to discuss these subjects and other technologies that are not included on DOE's sensitive subject list but which have nuclear weapons applications. Because DOE has not identified these as sensitive subjects, none of the 14 visits received DOE headquarters review and approval.

Numerous Internal Control Weaknesses

Finally, DOE does not have effective internal controls over the foreign visitor program. As a result, a number of problems exist, such as improper delegation of approval authority, failure to notify DOE about some visits, and lack of required pre-visit security plans and post-visit reports. DOE headquarters officials say that security plans serve as the agency's primary foreign visitor control. However, the laboratories provided only 89 of 248 required security plans and only about 25 percent of the post-visit reports. These problems could have been identified by internal reviews. However, neither DOE headquarters nor the field offices have conducted reviews of the foreign visitor program.

In addition, DOE has no integrated system to obtain and disseminate foreign visitor information to its field offices. Consequently, these offices lack important data that may be relevant to their access approval decisions. We found, for example, that an individual denied access to one laboratory visited another without the laboratory's knowing about certain derogatory data. Further, DOE headquarters' database did not have information on over 13 percent of the communist and other sensitive country visitors. DOE uses the database to analyze visit requests and determine trends in foreign information gathering activities. Without complete data, we question whether DOE can perform these functions effectively.

- - - -

In conclusion, Mr. Chairman, we believe that these problems illustrate a dilemma that DOE has not effectively resolved. As I noted earlier, the information and technology developed by the weapons laboratories have peaceful applications. Therefore, DOE and the laboratories want to disseminate it as widely as possible. However, the information and technology also have nuclear weapons applications. In our view, DOE does not have sufficient checks and balances in its foreign visitor controls to ensure that nonproliferation and security concerns are appropriately considered along with the need to advance scientific developments.

In order to prevent security breaches concerning nuclear weapons-related information, we have recommended that the Secretary of Energy take a number of actions, including requiring that background checks are completed prior to admitting a foreign national to a weapons laboratory, expanding the sensitive subjects list to include other areas that could be useful to adversary or proliferant nations, and periodically evaluating the field offices' and laboratories' compliance with DOE's requirements. We hope, Mr.

Chairman, that you and the Committee will strongly encourage the Secretary to implement our recommendations.

This concludes our testimony. We would be pleased to respond to any questions you or the members of the Committee may have.

VISITORS TO DOE WEAPONS LABORATORIES FROM JANUARY 1986 THROUGH SEPTEMBER 1987

	Lawrence Livermore	Los Alamos	Sandia	Total
Communist countries				
Bulgaria	0	1	0	1
People's Republic of China	41	69	8	118
Czechoslovakia	0	1	0	1
East Germany	0	2	1	3
Hungary	2	9	0	11
Poland	2	10	3	15
Romania	1	0	0	1
Soviet Union	13	34	10	57
Yugoslavia	1	14	0	15
Subtotal	60	140	22	222
Sensitive countries				
Algeria	2	1	0	3
Argentina	2	14	2	18
Brazil	13	19	0	32
Chile	14	2	0	16
Egypt	10	5	2	17
El Salvador	1	3	51	55
Ethiopia	0	1	0	1
Guyana	0	1	0	1
India	84	56	9	149
Iran	18	5	2	25
Iraq	0	2	0	2
Israel	75	60	53	188
Lebanon	4	0	0	4
Malawi	0	1	0	1
Nicaragua	1	0	0	1
Niger	0	1	0	1
Nigeria	5	2	0	7
Pakistan	7	4	0	11
Saudi Arabia	0	2	0	2
South Africa	9	7	1	17
South Korea	40	19	8	67
Syria	0	1	0	1
Taiwan	26	14	11	51
Tanzania	1	2	0	3
Zambia	1	1	0	2
Subtotal	313	223	139	675
Total	373	363	161	897

PREPARED STATEMENT

OF

MR. RICHARD A. DU VAL

ACTING DEPUTY ASSISTANT SECRETARY FOR OPERATIONS

DEFENSE PROGRAMS

AND

MR. RICHARD WILLIAMSON

ACTING DEPUTY ASSISTANT SECRETARY FOR INTERNATIONAL AFFAIRS

U.S. DEPARTMENT OF ENERGY

BEFORE THE

COMMITTEE ON GOVERNMENTAL AFFAIRS

U. S. SENATE

OCTOBER 11, 1988

Mr. Chairman, I am Mr. Richard Du Val of the Department of Energy and I appreciate the opportunity to appear before you today to discuss the Department of Energy's Visits and Assignments program for Foreign Nationals. We recognize the Committee's longstanding interest in non-proliferation policy and the management of sensitive information. With me today is Mr. Richard Williamson, Acting Deputy Assistant Secretary for International Affairs. I will briefly summarize those aspects of the Department of Energy's Visits and Assignments program, as requested by your letter, and I am prepared to discuss these and other matters as you may desire.

The Assistant Secretary for International Affairs and Energy Emergencies is responsible for the overall management of the Visits and Assignments program and for developing the Department's policies in this area. The Assistant Secretary for Defense Programs is responsible for the security and sensitive technology aspects of visits and assignments and determines the guidelines and procedures to implement the security aspects of the program. Both the Assistant Secretary for International Affairs and Energy Emergencies and the Assistant Secretary for Defense Programs are involved with reviewing specific requests for visits and assignments that require Headquarters approval. DOE Field Elements, national laboratories and other research and development facilities conduct day-to-day program activities that include approving most visits and assignments and providing necessary security.

While we have not had the opportunity to review in any detail the final General Accounting Office report, nor the recommendations, we have reviewed the draft statement of facts and recommended a number of changes to GAO investigators. The GAO review covered operations from January 1986 through

September 1987 and focused on policies and procedures which the Department recognized were inadequate. Over the last year, we have taken numerous actions to strengthen our Visits and Assignments program. We believe these and other planned activities will address the major GAO concerns, but we stand ready to make whatever other adjustments might be necessary to ensure a Visits and Assignments program that adequately balances the programmatic benefits of visits and assignments with the national security.

The Department considers the use of international cooperation and collaboration as an important element in many of our programs. Accordingly, it is our policy to support an active program of unclassified visits and assignments by foreign nationals to DOE facilities. These visits and assignments are conducted consistent with both DOE programmatic and security policies. Approximately 20,000 foreign nationals visit or are assigned to DOE facilities each year. Of these, the vast majority involve foreign nationals from non-sensitive countries at non-weapons laboratories to work on unclassified energy-related areas. As such, these are not sensitive.

A relatively small number of these foreign nationals, approximately 600 per year, are from sensitive countries and visit or are assigned to our multi-program weapons laboratories at Sandia, Lawrence Livermore and Los Alamos. While these laboratories have major responsibilities for classified nuclear weapons activities and for other sensitive but unclassified operations, they also have a wide array of non-sensitive programs. For example, Los Alamos is responsible for a range of activities from the most sensitive nuclear weapons work to operation of its Clinton P. Anderson Los Alamos Meson Physics

Facility, a totally unclassified user-facility open to scientific personnel from throughout the world. Such diverse activities present a particularly difficult challenge at the weapons laboratories in balancing the benefits of international collaboration with the need to protect our personnel, facilities, classified information, and sensitive technology.

There is continuing interaction between the Department and other agencies to support the Visits and Assignments program. While normal scientific collaboration among scientists and other program personnel is ongoing, we work with the Intelligence Community to help us identify potential security risks presented by visits and assignments. Information from the Intelligence Community is a factor considered in determining whether to approve a visit and assignment. Other important factors, such as the benefit of the visit or assignment to our scientific advancement, the subject to be discussed, the sensitivity of the facility involved, and the adequacy of security plans are also considered.

The Department has been working for some time to improve the Visits and Assignments program. Over the past year, many areas for improvement have been identified and we are currently pursuing a vigorous effort to strengthen the program. Chief among our recent accomplishments are:

- o In August of 1988, the Department issued a new Visits and Assignments policy statement. This policy guidance clarifies responsibilities of Secretarial Officers and Field Elements, outlines a process to streamline approvals, stresses the need for improved Headquarters oversight, and emphasizes improved Headquarters policy guidance to Field Elements. Mr. Chairman, I would like to provide a copy of this policy statement for the record.

- The Department is obtaining approval for the final version of a new DOE Order on Visits and Assignments. This Order addresses the need to effectively weigh programmatic benefit against the complexity of assuring that sensitive information and technology are protected. The new Order also emphasizes improved security measures by establishing standardized requirements for security plans, procedures for better identification of sensitive technologies and sensitive facilities, and it requires more involvement by responsible program officials at all levels of the approval process. The new Order also requires more specific reporting requirements, on-site reviews, new training programs, and an annual report to the Secretary of Energy.

- Over the last year, DOE Headquarters has improved the process for tracking and reviewing sensitive visits and assignments.

- In October 1987, the Department took steps to speed up the process of completing indices checks by allowing Field Offices to initiate their own requests directly with the Intelligence Community. We expect this to speed up the process. We are also automating indices check requests, which should help to significantly reduce response time.

- We recognize that people working in our weapons laboratories represent our first and best line of defense in protecting sensitive information and technology. In January of 1988, Defense Programs produced and distributed video tapes to sensitize our personnel about the of technology security aspects of visits and assignments and foreign travel. The video tapes are being used by DOE and its contractors to improve security awareness. Mr. Chairman, I would like to provide copies of these video tapes for the record.

- In February 1988, we initiated a program to improve nonproliferation and technology security awareness through on-site briefings at the three weapons laboratories. Representatives of other Federal agencies have assisted DOE and DOE contractor personnel in making these presentations.

- During the last six months, DOE Headquarters has worked with DOE Field Offices and the weapons laboratories to develop improved security plans that address both physical and technology security.

- In July 1988, a seminar to train weapons laboratory representatives on how to improve pre-foreign travel briefings for laboratory travelers was held which included significant emphasis on hostile intelligence activities.

- With the cooperation of the Intelligence Community, we recently held a two-day seminar for senior managers of the weapons laboratories and DOE Field Elements on the hostile intelligence threat. This session sensitized senior managers about the nature of the hostile intelligence threat in relation to the Visits and Assignments program. We plan to hold another seminar later this month.

- Each of our three weapons laboratories has taken other actions to improve security awareness among all those individuals, particularly our scientists and technical people, who are involved in collaborative efforts with foreign nationals. These actions include lectures, and special presentations dealing with security matters, as well as, briefings related to specific visits and assignments and foreign travel.

Currently, the Department is developing new implementing guidelines as a follow-on to our August 1988 policy statement and the soon to be published DOE Order on Visits and Assignments. As part of this initiative, we are establishing training programs to assure that DOE policies, authorities, responsibilities, and procedures for all DOE and DOE-contractor personnel involved with the Visits and Assignments program are clearly understood. We are also taking actions to assure that Field Elements are better able to identify and evaluate visits and assignments which may involve sensitive subjects.

Improvements in policy, process, and procedures for the Visits and Assignments program at DOE facilities is only one element of an on-going DOE initiative to improve access controls, generally, across the national laboratories.

Mr. Chairman, that concludes my statement and I will be happy to answer any questions that you or other members of the Committee may have.

Department of Energy
Washington, DC 20585

March 10, 1989

Honorable John Glenn
Chairman, Committee on
Governmental Affairs
United States Senate
Washington, DC 20510-3501

Dear Mr. Chairman:

I am writing in response to your letter dated November 21, 1988, in which you enclosed a number of questions regarding the Department's unclassified Foreign National Visits and Assignments Program at Department of Energy (DOE) weapons laboratories. We appreciate the opportunity to clarify several aspects that were raised during the hearing on this subject before the Senate Governmental Affairs Committee on October 11, 1988.

The Department's Foreign National Visits and Assignments Program is an important mechanism enabling scientific and technical experts in our national laboratories and other facilities to benefit from the expertise of the international scientific community. In addition, an increasing number of technically qualified personnel available to work at DOE facilities are foreign nationals. The Department's responsibility is to encourage international scientific collaboration in support of energy research and development, while protecting the national security and nonproliferation interests of the United States.

Prior to the General Accounting Office investigation, we had recognized the need to improve our policies with respect to both strengthened security control and more efficient administration of the program. Our principal goal has been to reduce the possibility of foreign nationals gaining unauthorized access to classified or other sensitive information while avoiding unnecessary restrictions on legitimate and valuable international technical exchange. This is a difficult challenge at DOE weapons laboratories, because they are multi-program research centers which pursue research and international collaboration across the full range of science and technology, including many areas which are not sensitive in any way. In fact, our nation's science and technology programs are enhanced in many ways by the international exchanges made possible by the Foreign Visits and Assignments Program.

Despite the advantages which accrue from active international collaboration, we recognize the need for more effective monitoring and control, increased security requirements, and tracking and documentation for foreign national visits and assignments. We have been working toward this end. Our efforts have led to the recent issuance of a major revision to DOE Order 1240.2 which establishes a firm policy for administration of a strong and effective program. Enclosed as Attachment 1 is a copy of the new DOE Order 1240.2A, which was signed January 19, 1989 and is in force.

In preparing responses to your questions (tabulated in Attachment 2), we have made every effort to explain the DOE position on this complex program and what has been done to improve it. The portion of this response that involves classified information is being forwarded to you as a separate package which will be dispatched at the same time as this package. If you have any further questions, please contact me.

Again, I thank you for the opportunity to provide additional explanation of the Department's Foreign National Visits and Assignments Program. Our continued efforts to improve the administration of this important program will result in more effective protection of our Nation's security interests.

M A Du Val
for Troy E. Wade II
Acting Assistant Secretary
for Defense Programs

Enclosures

QUESTION 1:	WHICH OFFICE IN DOE HAS ULTIMATE AUTHORITY TO AUTHORIZE OR DENY ACCESS BY FOREIGN VISITORS AND ASSIGNEES TO THE NUCLEAR WEAPONS LABS?
Response:	In accordance with the Department of Energy (DOE) Order 1240.2, Visits and Assignments by Foreign Nationals, dated January 5, 1981, the Assistant Secretary for International Affairs and Energy Emergencies (IE) is the administrator of the DOE unclassified visits and assignments program. As such, IE had final approval authority for all visits and assignments.

This version of the visits and assignments Order, used by the General Accounting Office (GAO) in its study, assigned to DOE field offices the approval authority for all visit and assignment requests to DOE weapons laboratories except for those dealing with 1) a sensitive subject, 2) a national of a sensitive country having access to a secure area, or 3) a visit by high- level foreign national. Under the Order applicable at the time, requests for these types of visits or assignments had to be approved by IE.

Approval authority for any visit or assignment that had been delegated to the field office under the previous Order could be assigned to the responsible laboratory director. Under these provisions, the Manager of Albuquerque Operations Office delegated approval authority to the Director of Los Alamos National Laboratory and to the President of Sandia National Laboratories, Albuquerque, for unclassified visits involving non-sensitive subjects by nationals of non-sensitive countries to their respective facilities.

Page 2 of Response to Question 1

From January 1981 to August 20, 1986, the Manager of the San Francisco Operations Office (SAN) delegated to the Director of Lawrence Livermore National Laboratory (LLNL) authority to approve all visits and assignments, except when involving:

a. A sensitive subject, if the visit or assignment was not in accordance with an international agreement.
b. Sensitive countries coupled with sensitive subjects.
c. High-level foreign nationals.
d. Secure areas of sensitive facilities, regardless of country or subject.
e. Specific programmatic areas as identified by the Director, Defense Programs (DP), SAN.

Since August 21, 1986, the Manager at SAN delegated to the Director of LLNL authority to approve visits (defined as five work days or less within a 60-day period), except when they involved:

a. A sensitive subject.
b. Nationals of communist-controlled countries.
c. Nationals of other sensitive countries.
d. High-level foreign nationals.
e. Secure areas, regardless of country or subject.

The new Order on visits and assignments (DOE 1240.2A) gives DOE field offices approval authority for all visit and assignment requests, except for those to Headquarters. Approval authority for visits and assignments except those involving security facilities, sensitive subjects, or sensitive country nationals to sensitive facilities may be delegated to designated laboratory directors.

QUESTION 2: UNDER WHAT CIRCUMSTANCES DOE'S INTERNATIONAL AFFAIRS (IE) INVOLVE DEFENSE PROGRAMS (DP) IN THE PROCESS OF REVIEWING PROSPECTIVE FOREIGN VISITORS AND ASSIGNEES TO THE LABS?

Response: Under the previous Order on visits and assignments, DP had the responsibility to concur or dissent in visits and assignments by sensitive country nationals (communist-controlled and other sensitives) to secure areas of sensitive facilities, and in assignments for nationals of communist-controlled countries to "weapons complex or production facilities."

In practice, IE submitted to DP for review a considerably larger number of requests than required by the Order, notably all those involving access to a secure area or concerned with a sensitive subject, and a large proportion of those involving sensitive countries.

Under the new Order (1240.2A), DP can be consulted by IE or the field office for clarification of guidance or for discussion of security concerns. DP is responsible for issuing programmatic guidance to the field for use in administering the visits and assignments. DP is also responsible for oversight of the security aspects of the visits and assignments program.

QUESTION 3: IS DP'S CONCURRENCE REQUIRED WHEN APPROVING VISITS OR ASSIGNMENTS?

Response: No. Thousands of visits and assignments occur each year. Under the previous and present orders, the great majority of visits and assignments to DOE facilities, including weapons laboratories, have been and will continue to be approved in the field, and except for entirely non-sensitive visits for which access is logged at the site, Headquarters is notified by an information copy of the visits and assignment request Form IA-473. However, DP's concurrence was frequently requested and obtained as indicated in the response to Question #2, and whenever specifically requested by a field office.

Under the previous Order, a nonconcurrence by DP for a visit or assignment to a sensitive facility normally was discussed by all involved parties and issues were resolved before approval or disapproval was made by IE, as indicated in the response to Question #1.

IE submitted many visit and assignment requests to the cognizant Headquarters program offices, including DP when its programmatic interests were involved. Such program office review is particularly important when it is necessary to consider programmatic benefits, as well as security considerations.

Under the new Order (1240.2A), DP's concurrence is only required for programmatic interest in Headquarters visits.

QUESTION 4:	HAVE THERE BEEN CASES WHEN DP OR IE HAVE NOT CONCURRED? IF SO, CAN YOU ESTIMATE HOW FREQUENTLY THIS HAPPENS, AND PROVIDE SOME EXAMPLES?
Response:	Yes. However, most visit and assignment requests submitted under the previous Order to Headquarters eventually resulted in approvals after consideration of program and security interests.

DP would not concur if the program office had objections or the Office of Security Affairs could not determine that adequate security could be provided to protect DOE or DOE contractor personnel, facilities, sensitive subjects, or other security interests during the visit or assignment.

IE may have disapproved a visit or assignment on foreign policy grounds, based on knowledge of and experience with foreign policy, including energy policy; consultation with the Department of State was often involved.

Proposed visits or assignments were reviewed by cognizant Program Secretarial Officers, IE, and DP and were determined to be in the best programmatic interest of the Department. During the review of a visit or assignment request, efforts were often made to restructure the visit or assignment so as to remove the potential foreign policy, programmatic, or security concerns, while providing a mechanism for legitimate and important interactions to occur. Such restructuring may have included changes in numbers of foreign national participants, in individual members of the group, in scope of subjects to be discussed, in areas or facilities involved, in duration of the visit or assignment, and in security procedures in place. The following examples illustrate such instances:

- After consultation with the Department of State, IE denied on foreign policy grounds the assignment of a South African scientist to a weapons laboratory.

- At the request of a DOE program office, visits by experts of a Western European country to a DOE facility were denied by IE because the country involved had not been cooperative in providing reciprocal access to DOE personnel.

Over the last year, DP reviewed over 1600 visit and assignment requests. Of these, several hundred were concurred in by DP only after required modifications were made to the structure of the visit or assignment. After thorough reviews, DP nonconcurred in 42 visits and 10 assignments, or 3 percent of all reviewed. Of the nonconcurrences by DP, 18 (35 percent of total) were because of insufficient time to adequately review (including incomplete indices checks). Many of these were rescheduled and the requests concurred in after completion of the DP review. Twenty-seven of the DP nonconcurrences were because of incompatibility of the subject, the nationality or association of the visitor/assignee, and the facility. Examples of these include: a visit to SDI work by a national of a non-agreement country; a visit involving information that could be nuclear-weapons-related (e.g., high explosives and hydrodynamics) with nationals of countries who were not adherents to the Treaty on The Non-Proliferation of Nuclear Weapons (NPT); and a request to visit the Nevada Test Site by a national of a non-adherent country. Of the visit and assignment requests with DP nonconcurrence in the last year, six were because physical security was determined to be inadequate and only one was because of derogatory information about the individual.

QUESTION 5: DOES DOE HAVE ANY EXPLICIT CRITERIA FOR RESOLVING NON-CONCURRENCES BY EITHER DP OR IE? IF SO, PLEASE PROVIDE A TEXT OF THESE GUIDELINES.

Response: Previously, there were no specific criteria or guidelines to resolve non-concurrence by program offices, IE, or DP. However, the new Order contains policy guidelines on approval/disapproval of visits and assignments.

QUESTION 6: HAVE DP'S NON-CONCURRENCES EVER BEEN OVERRIDDEN? PLEASE GIVE SPECIFIC EXAMPLES WITH EXPLANATIONS THEREOF.

Response: This has very rarely occurred when weapons laboratories have been involved. In most of these few cases, DP had withheld concurrence because indices checks were not complete, the visitor was in the process of arriving at the facility, and there were strong foreign policy or programmatic grounds for approval. (Complete indices checks were not required under the previous DOE Order, 1240.2.) Examples where approval was granted with an unresolved DP non-concurrence outstanding are:

- Los Alamos National Laboratory requested that a Soviet scientist be authorized to visit the Los Alamos Meson Physics Facility (LAMPF) for five days to discuss cosmic ray physics and neutrino astrophysics. Both the facility and the subject matter are non-sensitive. DP did not concur because an indices check was not complete. The scientist is head of an important laboratory of the Soviet Academy of Sciences, and had been specifically invited; reciprocal access for U.S. scientists to corresponding Soviet facilities was important to the DOE high-energy physics program. IE approved the visit because of political considerations and programmatic benefits, noting that the visitor was to be fully escorted at all times.

Page 2 of Response to Question 6

- Lawrence Livermore National Laboratory requested that a Soviet scientist visit non-sensitive areas of the laboratory for one day to discuss muon-catalyzed fusion in energy producing systems. This is a non-sensitive subject. The scientist was head of a division at the Kurchatov Institute of Atomic Energy and was in a position to make an important contribution to the DOE fusion program. Although an approved specific security plan was completed, DP did not concur because the indices check was not complete. In view of the important programmatic benefits, IE approved the visit, subject to a requirement that the visitor be escorted at all times. DP subsequently concurred.

QUESTION 7: PLEASE PROVIDE THE COMMITTEE WITH DATA ON THE ANNUAL BUDGET AND PERSONNEL LEVELS DEVOTED BY DP AND IE TO IMPLEMENTING FOREIGN VISITOR CONTROLS, SINCE JANUARY 1983.

Response: The attached matrix illustrates DOE Headquarters personnel levels for DP and IE associated with foreign visitor control activities from FY 1983 to FY 1989.

[Committee staff note: Date for "Budgeted fund" and "Actual $ spent" were absent from DOE's table prepared in response to this question.]

Attachment

FTE'S

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89
DP (Feds)	.85	.85	.85	.85	1.35	1.50	1.40
DP Lab (FTEs)	.10	.10	.10	.10	.10	.50	.50
DP contractors					2.0	2.0	2.0*
IE (Feds)	.40	.40	.50	.50	.60	.70	.70
IE contractors	--	--	1.00	1.00	1.00	1.20	1.20
Budgeted fund: (overall)							
Actual $ spent: (overall)							
Total DP/IE:	1.35	1.35	2.45	2.45	5.05	5.90	5.80

*Contracted resource from DP-40 paid for by DP-34

Full-time equivalent is a full-time Federal employee who works a mimimum of 2080 hours per year.

QUESTION 8: THE COMMITTEE WAS TOLD THAT DOE IS REVISING ITS ORDER 1240.2, WHICH GOVERNS FOREIGN VISITORS AND ASSIGNMENTS:

HOW LONG HAS THIS REVISION PROCESS BEEN GOING ON? WHY HAS IT TAKEN SO LONG? WHEN WILL THE NEW ORDER BE ISSUED?

Response: Early in 1988, the Under Secretary directed that a policy study for improving the management of unclassified visits and assignments be conducted. The study was completed in July, recommendations based on it sent to the Under Secretary in August, and the completed draft Order sent to the Under Secretary in September. Following publication of the GAO report in October, further changes were made to the draft. After resolution of remaining problems, the new Order was signed on January 19, 1989 and is in effect.

QUESTION 9a:	THE COMMITTEE WAS ALSO TOLD THAT THE NEW ORDER WILL GIVE ADDITIONAL RESPONSIBILITIES TO THE FIELD OFFICES. IF SO, WHAT ADDITIONAL TECHNICAL EXPERTISE AND OTHER RESOURCES WILL BE PROVIDED TO THE FIELD OFFICES TO CARRY OUT THESE ACTIVITIES?
Response:	Consistent with the overall management structure of the Department, under the new visits and assignment Order, review and approval authority of most visit and assignment requests will rest exclusively in the field offices. This will allow the cognizant Headquarters offices (IE, Program Secretarial Officers, and DP) to dedicate their limited resources to managing the program; developing implementation guidelines for field offices; identifying, developing, and distributing information resources to field offices; providing training programs that address administration, foreign policy, programmatic, and security aspects of the program to field offices; and implementing oversight of the program in Headquarters and the field. The new Order explicitly assigns responsibilities for these activities to the appropriate Headquarters offices. Under the unclassified visits and assignments program, each DOE field office will be tasked with identifying one or more individuals responsible for counterintelligence. The Albuquerque and San Francisco field offices have the greater responsibility for this function in that the vast majority of unclassified sensitive country visits and assignments to sensitive DOE facilities are to the three national weapons laboratories -- Sandia, Livermore, and Los Alamos. Albuquerque

Operations Office has already established organizations and individuals with this responsibility. At each field office, a full-time counterintelligence billet has been established and filled. We expect the other DOE field offices to identify an organization and individual to be responsible for counterintelligence with respect to the unclassified visits and assignments program soon.

QUESTION 9b: DO THE FIELD OFFICE STAFFS POSSESS THE INFORMATION AND EXPERTISE THAT WOULD ENABLE THEM TO RENDER INFORMED JUDGEMENT ON PROSPECTIVE VISITORS AND ASSIGNEES FROM SENSITIVE COUNTRIES?

Response: The people in the best position to assess the programmatic and security aspects of most visits and assignments are those closest to the activity, both in terms of physical proximity and knowledge of the day-to-day operations in the field. Technical experts in the local program office are the most familiar with the needs of the program as well as the aspects of technologies that are at potential risk at each facility. Local security personnel (physical and technology) have the best knowledge of programs and facilities and how each visit and assignment can best be implemented, while protecting Departmental interests.

The training programs and guidelines required by the new Order will sensitize the experts in the field to the administrative, programmatic, foreign policy, and security aspects of most visits and assignments. Resources provided to reviewers can then be used to adequately evaluate requests. Oversight through inspection and evaluations of program activities in the field will identify weaknesses in the program.

DOE has only recently established a formal counterintelligence program in the Office of the Deputy Assistant Secretary for Intelligence. It is being staffed at Headquarters and in the field offices.

Page 3 of Response to Question 9b

In addition, we believe that a program for coordinating indices checks is well developed at all field offices, and is most developed at the three weapons laboratories, where DOE has its greatest concerns with respect to sensitive country visitors and assignees. We recognize, however, that more work needs to be done across the board with respect to briefings and debriefings of hosts, threat awareness, and counterintelligence operations and analysis. That will come with time as the counterintelligence program grows and matures.

[Committee staff note: DOE has informed Committee staff that this page was incorrectly numbered page 3 when it should have been labeled page 2.]

QUESTION 9c:	DOES DOE HEADQUARTERS CURRENTLY PROVIDE SUCH INFORMATION TO THE FIELD OFFICES?
Response:	Under the previous Order and implementation procedures, requests for most sensitive visits and assignments were submitted to IE for approval and DP review and concurrence. Over the last three years, DP has developed many resources for evaluating the technology security aspects of visits and assignments. Under the new Order, where review and approval authority of most requests is placed in the field offices, Headquarters offices will provide these resources through training and information programs for responsible and knowledgeable personnel in the field. The Deputy Assistant Secretary for Intelligence presently provides both indices checks and counterintelligence information to the field offices on a need-to-know basis. He also provides the field offices threat awareness training and support with the assistance of the intelligence community.

QUESTION 10a: GAO TESTIFIED THAT DOE HAS NOT PROVIDED, AND DOES NOT NOW PROVIDE, THE NUCLEAR PROLIFERATION "WATCH LIST" TO THE FIELD OFFICES. IS THAT TESTIMONY ACCURATE? IF SO, HOW CAN THE FIELD OFFICES BE EXPECTED TO IDENTIFY SPECIFIC VISITORS OR ASSIGNEES THAT REQUIRE SPECIAL SECURITY PLANS FOR INDICES CHECKS?

Response: Under Section 57.b of the Atomic Energy Act, as amended, and its implementing regulations (10 CFR Part 810) the Secretary of Energy has responsibility for authorizing participation by U.S. citizens in certain foreign unclassified nuclear activities that could either directly or indirectly assist in the production of special nuclear material. The intent of these review and authorization procedures is to ensure that any such U.S. assistance would not be inimical to U.S. interests. In addition, under Part 778 of the Department of Commerce's Export Administration Regulations, DOE reviews certain Department of Commerce (DOC) export license applications to ensure that they are not contrary to U.S. national security and nonproliferation policy. The "Nuclear Proliferation Watch List" was primarily intended to assist in the fulfillment of DOE's program objectives in support of these functions by identifying parties with high risk profiles and thereby ensuring that proposed exports involving these parties receive proper scrutiny.

The Nuclear Proliferation Watch List, which was developed in 1987 by the Deputy Assistant Secretary for Security Affairs (DASSA), contains lists of consignees known or believed to have ties to nuclear activities and located in countries posing a potential nuclear proliferation risk. The list is intended to help DOE and DOC licensing officials differentiate among end-users and to assist in determining which export cases pose the greatest potential proliferation risk. Within DOE, the list is used by the DASSA, in conjunction with information from several other resources, when reviewing export applications for nuclear-related commodities and technologies that require the express approval of the Secretary of Energy under 10 CFR 810. For the DOC, it is a tool to enable it to focus its efforts, implement nuclear nonproliferation controls more precisely, and ensure a more thorough case review.

Because it contains intelligence information which could alert those on the list that we are suspicious of their activities, this list is classified as Secret National Security Information, and its distribution limited on a conservative need-to-know basic.

The "Watch List" was never intended to be used as a blacklist, a definitive statement of the identified parties' activities/status, or even a comprehensive list of those having ties to nuclear activities. Also, it does not contain names of individuals.

Under the previous Order and implementing procedures, requests for visits and assignments by individuals from those countries of potential concern should have been submitted to Headquarters for IE approval with DP review and concurence. The "Watch List" has been one of many tools used by the DASSA when reviewing the security aspects of sensitive visits and assignments requests. Therefore, distribution of the "Watch List" to the field has not been necessary. In addition, all such visits and assignments required specific security plans and indices checks, whether or not the individual's affiliation was with a party on the "Watch List."

It should be noted that the sensitivity of the contents of the "Watch List" would make DOE-wide distribution to all visit and assignment reviewers, most of whom are not cleared to use it, infeasible. We have, however, recently made this list available to appropriate personnel at each of the field offices, at all DOE weapons laboratories, and within Headquarters, in order that they may use this resource in their review of visits and assignment requests under the new visits and assignments Order.

QUESTION 10b: GAO ALSO TESTIFIED THAT "THE LABS WERE NOT EVEN AWARE THAT THE LIST EXISTED WHEN WE CHECKED WITH THEM" AND THAT DOE'S OFFICE OF "INTERNATIONAL AFFAIRS WAS NOT AWARE OF THIS LIST EITHER," ACCORDING TO GAO'S INTERVIEWS. WHAT STEPS HAVE BEEN TAKEN TO DISSEMINATE THIS LIST TO APPROPRIATE LAB, FIELD OFFICE, AND HEADQUARTERS PERSONNEL? WHY WAS THE LIST NOT DISSEMINATED EARLIER?

Response: In anticipation of the changes in approval authority and training requirements of the new Order, additional copies of the "Watch List" have been distributed to appropriate personnel at each of the field offices, at all DOE weapons laboratories, and within Headquarters. Training provided by Headquarters under the new Order will help visit and assignment review personnel in using the list and other resources.

It should be understood that the DOE "Watch List" was originally developed to assist DOE and the Department of Commerce as a tool for evaluating the effectiveness of their prescreening of export license applications. Because of its format, content, and classification, there has been limited development of alternate uses for the "Watch List." Because of the intelligence sensitivity of the list and the varying degrees of technology transfer and security concern for each facility listed, DP found it programmatically safer to maintain the list at Headquarters.

QUESTION 10c: DOES DOE DISPUTE GAO'S FINDINGS CONCERNING THE LACK OF INDICES CHECKS AND SECURITY PLANS FOR FOREIGN VISITORS AND ASSIGNEES FROM SENSITIVE COUNTRIES AT THE LABS? WITHIN THE LAST THREE YEARS, HOW MANY OF THESE VISITORS/ASSIGNEES FROM SENSITIVE COUNTRIES CAME SPECIFICALLY FROM DOE'S WATCH-LIST FACILITIES?

Response: Based on analysis of the GAO findings, their conclusions about deficiencies in the indices check procedures cannot be disputed. We do disagree with their conclusions about the deficiencies in the security plan process at Sandia National Laboratory - Albuquerque.

The requirements for indices checks and security plans cited in the GAO report are actually combinations of evolving Departmental and field office orders and guidance. While the Departmental Order did not change during the period of the GAO study, field office orders and guidance to the weapons laboratories did increase requirements. Consequently, the GAO erroneously used the most current, and therefore more restrictive, requirements as criteria for the entire period.

In all cases, field office requirements for indices checks and security plans match or exceed those of the previous Departmental Order. Headquarters guidance and field office requirements have also become stricter in the recent years, as concern over visits and assignments by nationals of sensitive countries has increased.

Indices Checks

Under the previous Departmental Order, indices checks were required only for assignments of foreign nationals of communist-controlled countries to weapons complex and production facilities (including weapons laboratories) and all visits and assignments by foreign nationals of sensitive countries to secure areas of sensitive facilities (including weapons laboratories). Field office directives for the three DOE weapons laboratories had the same or more restrictive requirements for indices checks. In addition, a large number of indices checks were requested that were not required by Departmental or field directives.

The new visits and assignments Order requires indices checks for any visit or assignment 1) involving access to a security facility, 2) a sensitive subject, or 3) a foreign national of a sensitive country to a sensitive facility. Under the new Order, an indices check will also be required for the assignment of a national of a sensitive country to a non-sensitive facility.

Page 3 of Response to Question 10c

Security Plans

Under the previous Department Order, security plans were required for visits and assignments to sensitive facilities. Field office directives for the three DOE weapons laboratories had the same or more restrictive requirements for security plans. The new visits and assignments Order requires security plans for any visit or assignment involving 1) access to a security facility, 2) a sensitive subject, or 3) a foreign national of a sensitive country to a sensitive facility. Under the new Order, a security plan will also be required for the assignment of a national of a sensitive country to a non-sensitive facility.

Based on analysis of the GAO findings and their conclusions about deficiencies in the security plan process, we would like to note for the record that at Sandia the GAO: 1) erroneously identified some visits as being to secure areas, and thus requiring security plans; 2) in many cases did not acknowledge an effective and timely security plan process; 3) did not note that some of the visits or assignments highlighted in their report had actually been cancelled; or 4) used stricter criteria than were in place at the time (see previous discussion).

"Watch List"

Over the last three years, 144 individuals who were associated with parties identified on the "Nuclear Proliferation Watch List" have visited or been assigned to DOE weapons laboratories. Eight-two percent of these (117) visited the laboratories to discuss or participate in activities in support of Department programs that are in no way considered sensitive, such as solar energy, quantum physics, oil shale, economics, transportation, medical research, waste storage, and risk assessment. Another three percent of these individuals (5) visited the laboratories under agreements with the International Atomic Energy Agency or the U.S. Information Agency. After reviewing the visits/assignments of the remaining 22 individuals, we have determined that none had access to any material that should not have been disclosed to the visitor/assignee. It must be reiterated that the mere identification of a facility as being on the "Watch List" indicates only a concern for its overall activities or potential capabilities.

QUESTION 10d: IN RESPONSE TO A QUESTION FROM SENATOR BINGAMAN, MR. WILLIAMSON (DOE/IE) TESTIFIED THAT THE LIST OF "SENSITIVE COUNTRIES" INCLUDED IN THE GAO STUDY WAS AN OUTDATED 1981 LIST, AND THAT AN "UPDATED" LIST WAS AVAILABLE. TWO WEEKS AFTER THE HEARING, THE COMMITTEE RECEIVED A COPY OF THE DOE'S "INTERIM POLICY GUIDANCE" ON THE FOREIGN VISITOR ISSUE, WHICH CONTAINS DOE'S MOST CURRENT "SENSITIVE COUNTRY" LIST. ASIDE FROM THE ADDITION OF 10 TYPOGRAPHICAL ERRORS, WE COULD FIND NO DIFFERENCE BETWEEN THE ENTRIES ON "NEW" LIST COMPARED WITH THE 1981 LIST (SEE ATTACHMENTS). PLEASE CLARIFY THE CHANGES THAT HAVE BEEN MADE IN THIS LIST, AND EXPLAIN DOE'S CRITERIA FOR DETERMINING SENSITIVITY.

Response: The GAO testified that its investigation was based on the 1981 Order. Attached is the visits and assignments list of sensitive countries, to which there was a classified addendum, as provided in the 1981 DOE visits and assignments Order. There was in 1981 a different "sensitive country" list for DOE-funded foreign travel.

In 1986, because some administrative personnel in the field handling these matters did not have security clearances, and because of confusion in dealing with two "sensitive country" lists, a single unclassified "sensitive country" list was issued for both purposes. (This revised list was issued during the period covered by the GAO study.)

The Department and Mr. Williamson were unaware that the GAO had used the 1986 list, rather than the 1981 Order, in its published report. Because the sensitive country list for the new Order had not yet been approved, the list used in the "Interim Policy Guidance" was the same as that issued in 1986.

Page 2 of Response to Question 10d:

The sensitive country list with the new visits and assignments Order has been shortened somewhat, and all countries on the list are now referred to as "sensitive" without a "communist-controlled" category. Because the list is a procedural tool to assist in the internal approval management process, the criteria are varied: national security, nuclear nonproliferation, regional instability, or support for terrorism. It is anticipated that this new list will also be used in conjunction with DOE-funded foreign travel.

ATTACHMENTS: (Sensitive Countries) - 1981 list
1986 list
1989 list

ATTACHMENT FOR 10d
1981 LIST

SENSITIVE COUNTRIES

1. Communist-Controlled Countries

Afghanistan
Albania
Bulgaria
Cuba
Czechoslovakia
Democratic Kampuchea (Cambodia)
German Democratic Republic
Hungary
Laos

Mongolia
North Korea
People's Republic of China
Poland
Romania
Union of Soviet Socialist Republics (including Estonia, Latvia and Lithuania)
Vietnam

2. Other Sensitive Countries

The list of "other sensitive countries" is classified for diplomatic reasons and is subject to frequent changes. Countries on this list are normally located in areas of increased world or regional tension or are associated with nuclear non-proliferation concerns. This list will be distributed and revised periodically by classified telegram to the Heads of Departmental Elements.

ATTACHMENT FOR 10d.
1986 LIST

SENSITIVE COUNTRIES

Countries appear on these lists for various reasons related to DOE internal policies and procedures, without necessarily reflecting policies of any other elements of the United States Government.

1. COMMUNIST-CONTROLLED COUNTRIES.

Afghanistan
Albania
Bulgaria
Cambodia (Kampuchea)
China (People's Republic)
Cuba
Czechoslovakia
Germany, East
  (Democratic Republic)
Hungary
Korea, North (Democratic
  People's Republic)
Laos
Mongolia
Poland
Romania
Soviet Union
Yemen (Aden)
Vietnam
Yugoslavia

2. OTHER SENSITIVE COUNTRIES.

Algeria
Andorra
Angola
Antigua-Barbuda
Argentina
Bahrain
Belize
Benin, Peoples Republic of
Brazil
Burma
Chad
Chile
Comoro Islands
Congo
Djibouti
Egypt
El Salvador
Ethiopia
Grenada
Guyana
India
Iran
Iraq
Israel
Kiribati
Korea, South (Republic of)
Kuwait
Lebanon
Libya
Malawi
Mauritania
Mozambique
Namibia
Nicaragua
Niger
Nigeria
Oman
Pakistan
Qatar
Saudi Arabia
Solomon Islands
South Africa
Syria
Tanzania
United Arab Emirates
Vanuatu
Yeman Arab Republic (Sanaa)
Zambia
Zimbabwe

3. Visits and assignments relating to Taiwan are handled under the policies and procedures which pertain to "Other Sensitive Countries."

Vertical line denotes change.

ATTACHMENT FOR 10d.
1989 LIST

DOE 1240.2A
1-19-89

Attachment 3
Page 1 (and 2)

SENSITIVE COUNTRIES

1. Countries appear on these lists for reasons specified in paragraph 6o, without necessarily reflecting views of any other elements of the United States Government.

Afghanistan
Albania
Algeria
Andorra
Angola
Argentina
Bahrain
Benin, People's Republic of
Brazil
Bulgaria
Burma
Chile
China, People's Republic of
Comoro Islands
Congo
Cuba
Czechoslovakia
Djibouti
Ethiopia
Germany, East (Democratic Republic of)
Guyana
Hungary
India
Iran
Iraq
Israel
Kampuchea (Cambodia)
Korea, North (Democratic People's Republic of)
Korea, South (Republic of)
Kuwait
Laos
Lebanon
Libya
Mauritania
Mongolia
Mozambique
Namibia
Nicaragua
Niger
Oman
Pakistan
Poland
Qatar
Romania
South Africa
Soviet Union
Surinam
Syria
Tanzania
United Arab Emirates
Vanuatu
Vietnam
Yemen (People's Democratic Republic of) (Aden)
Yugoslavia
Zambia
Zimbabwe

2. Visits and assignments relating to Taiwan are handled under the policies and procedures which pertain to Sensitive Countries.

QUESTION 10e: GAO TESTIFIED THAT "THE CONTROLS DOE PLACES ARE A LOT STRONGER ON COMMUNIST COUNTRY VISITORS THAN THEY ARE ON VISITORS FROM OTHER SENSITIVE COUNTRIES." IN TERMS OF THE ACTUAL PRACTICES OF DOE AND DOE-AFFILIATED ORGANIZATIONS DURING THE PERIOD OF THE STUDY, WAS THAT AN ACCURATE STATEMENT? IF SO, WHAT IS THE RATIONALE FOR SUCH AN ARRANGEMENT? WOULD SUCH A STATEMENT BE ACCURATE NOW?

Response: In 1981 when the previous visits and assignments Order referenced in the GAO report was implemented, the DOE sensitive country list was based on the same four criteria described in the previous answer. In addition, some countries were added to the list for Government policy reasons.

Working with other Government agencies, DOE elements have been very active in nuclear nonproliferation efforts. However, at that time the Department's primary concern involved the potential compromise of information to those countries which posed a national security concern. Therefore, the Order included the tightest restrictions on visits and assignments by nationals of communist-controlled countries and lesser restrictions on nationals of all other sensitive countries.

Since publication of the previous visits and assignments Order in 1981, the attitude of the Department has changed. Through training and program review conferences, the DASSA has raised the sensitivity of Headquarters and field office personnel to the potential for a country to use the DOE visits and assignments program to advance its technological base as a nuclear proliferant. The direction given by the DASSA to field offices in the past few years has broadened the scope of the

the restrictions, which had previously been applied only for nationals of communist-controlled countries, have been extended to apply to all who are on the sensitive country list, which includes non-signators to the NPT.

As a result, the Department's concern over nuclear proliferation is reflected in the new visits and assignments Order in which there is no differentiation among countries of nuclear non-proliferation concern and those other sensitive countries, which are of concern for other security-related reasons.

QUESTION 11a: THE COMMITTEE WAS INFORMED THAT DOE WAS REVISING ITS "SENSITIVE SUBJECT" LIST. PLEASE PROVIDE DETAILS OF THIS REVISION, INCLUDING PARTICIPANTS IN THE REVIEW PROCESS, CURRENT LIST CONTENTS, SPECIFIC ADDITIONALS OR DELETIONS, EXPLANATORY MATERIAL, AND PROJECTED DATE OF COMPLETION.

Response: A "sensitive subject" is an unclassified title or topic identified by DOE which involves information activities, commodities, and/or technologies that could (1) assist directly or indirectly in the design, development, testing, or production of a nuclear explosive, and (2) assist in the development of other technologies with possible defense applications. These sensitive subjects are described in Attachment 5 of DOE Order 1240.2A. The pertinent pages are attached. It must be borne in mind that much, if not most, information included under the rubric of a sensitive subject may not, in fact, be sensitive. However, disclosure of certain information contained in a sensitive subject has the potential for enhancing nuclear weapons capability, leading to nuclear proliferation, divulging militarily critical technologies, or revealing other advanced technologies of potential national security or nuclear proliferation concern. Therefore, they require special management oversight, especially with regard to release to foreign nationals.

Traditionally, the DOE sensitive subject list comprises two parts: topics related to nuclear weapons and nonproliferation, with which the Department is primarily involved, and other sensitive technologies. The latter consists of export controlled, "dual-use," and rapidly advancing technologies.

Until last year, details of the nuclear weapons and nonproliferation topics were found only in Chapter 17 of the Militarily Critical Technologies List (MCTL). Details of other sensitive subjects can be found in the other chapters of the MCTL.

The MCTL was originally issued under the Congressional mandate by the Department of Defense in 1984. The document, which has been revised several times, is classified Secret Formerly Restricted Data, but a very condensed unclassified version is also available. DP has responsibility for the contents of the chapter dealing with nuclear technologies. Technical representatives of DOE weapons, reactor, and materials production facilities contribute to the contents of the chapter through technical working groups (TWGs) that meet several times a year. DOE also provides representatives to the TWGs for other militarily critical technologies, such as directed energy, where it maintains technical expertise.

Because of the classified nature of the MCTL, its distribution to all individuals potentially involved in the review of visit and assignment requests was not feasible. The intent therefore of the 1981 Order was to use the list as a prescreening mechanism. If the subject of the visit or assignment was included on the sensitive subject list, the request would then be sent to Headquarters for DP review of the proposed visit or assignment and IE approval.

Last year the DASSA funded a program to develop an independent document, the Nuclear Technology Reference Book (NTRB), that not only identifies the sensitive aspects of nuclear technologies, but also describes the rational for including or excluding items from the list. A Secret Formerly Restricted Data version of the NTRB has been completed and has been provided to key personnel at field offices, and weapons laboratories, and DOE Headquarters, as well as to other Government agencies authorized access to such information. The effort in this program for FY90 is to develop and publish separate versions of the NTRB for weapons, reactors, and materials production technologies so as to reduce the conflict between the need for required detail of one technology and to meet classification need-to-know requirements.

The DOE sensitive subject list in the new Order has been updated to be consistent with that in the DOE foreign travel Order. However, the user is now referred to the NTRB or MCTL, as appropriate, for further details on specific subjects. Unclassified "guidelines" have been developed by DP's Office of Classification and Technology Policy to assist the field offices in their review of proposed visits and assignments dealing with the subjects highlighted in the Order. Training of cognizant Headquarters and field office personnel has begun and includes familiarization with the contents and use of these documents.

When reviewing the specifics of each request under the new Order, the approval authority will now be able to consider the particular aspects of the technology involved and the specific risks that could result from its transfer to a foreign source.

ATTACHMENT FOR QUESTION 11a.

SENSITIVE SUBJECTS

This is a list of areas of technical subject matter or technologies that are considered to be "sensitive." The list identifies subjects related to nuclear weapons and the prevention of the proliferation of nuclear weapons and also identifies other sensitive technologies.

Topics Related to Nuclear Weapons and Nonproliferation*

1. Nuclear weapons production and supporting technologies.
2. Nuclear explosion detection and evaluation.
3. Production, handling and metallurgy of thorium, uranium, and plutonium.
4. Uranium enrichment. Discussions regarding contractual and related program matters concerned with the provision of U.S. uranium enrichment services and other non-U.S. marketing activities conducted under the purview of the Assistant Secretary for Nuclear Energy are not considered "sensitive" subjects as defined in this Order.
5. Large-scale tritium production technology.
6. Lithium isotope production.
7. Heavy water production.
8. Uranium hexafluoride production.
9. Fuel fabrication.
10. Reprocessing technology.
11. Physical security systems and procedures related to protection of nuclear and other sensitive facilities.
12. Production of reactor-grade zirconium, graphite and beryllium.
13. Advanced nuclear reactor systems, space and mobile reactors, naval nuclear reactors. (The Assistant Secretary for Nuclear Energy requires that approval authorities at field locations ensure prior consultation with the Office of Nuclear Energy before approving any visits or assignments involving its programs in these subject areas). Light water, gas-cooled, and liquid metal cooled reactors are not considered to be "sensitive" unless one of the topics in items 9 through 12 above are involved.
14. Inertial confinement fusion.

* More detailed descriptions of the items in this list can be found in the Nuclear Technology Reference Book.

Other Sensitive Subjects*

Certain additional unclassified subjects are considered to be "sensitive" if they fall into one or more of the following categories:

1. Technologies or aspects of the technology that are under export control, i.e., equipment, services to that equipment, or technical data related to that equipment that require review and approval before export;

2. Technologies or certain aspects of the technology that are "dual-use," i.e., those technologies that have a peaceful application and also have a militarily critical application and are proposed for export control; or

3. Technologies that are advancing rapidly such that a reasonable projection of the militarily critical applications of the technology would cause certain aspects of the technology to become classified or placed under export control.

Specific technologies qualifying as "Other Sensitive Subjects" are listed below:

Computer systems and computer component development, specifically designed for military application.
Computer security procedures involving encryption.
Secure computer-controlled communications systems.
Computer software specifically designed for military applications.
Advanced concepts of computer-aided design, computer-aided manufacturing, and computer-aided testing.
Manufacturing and fabrication techniques for high performance materials.
Directed energy systems technologies, including:
  extremely high energy, high brightness lasers;
  extremely high current, high brightness particle beams;
  high kinetic energy macro particle accelerators;
  very high power radio frequency power sources, involving very short or very long wavelengths;
  high energy electrical power conditioning systems for these technologies.
Techniques for preparation of ultra-high purity semiconductor materials.
Very high speed instrumentation and diagnostics, as may be applicable to directed energy systems and weapons development.
High energy density batteries and fuel cells.
Fabrication techniques for very high field, large bore superconducting magnets.

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* More detailed descriptions of the items in this list can be found in the Militarily Critical Technologies List.

QUESTION 11b: GAO TESTIFIED THAT DOE TOLD THEM ONLY ONE OF THE 818 COMMUNIST AND SENSITIVE COUNTRY VISITS BETWEEN JANUARY 1986 AND SEPTEMBER 1987 INVOLVED SUCH A SUBJECT, BUT THAT GAO FOUND "AT LEAST 37 OTHERS". HOW MANY VISITS OR ASSIGNMENTS DURING THAT PERIOD INVOLVED SUBJECTS THAT DOE REGARDS AS "SENSITIVE"?

Response: Under the previous visits and assignments Order, IE was not required to have DP review or concur in the approval of a visit or assignment involving a sensitive subject. However, IE did submit to DP for review and concurrence occasional requests sent to Headquarters because they involved sensitive subjects. In addition, DP did identify and review requests involving sensitive subjects submitted to Headquarters for approval because of other sensitivities (see responses to questions 1-3).

It is our understanding that for the review of sensitive subject visits and assignments, the GAO teams relied solely on the contents of subject box in the visit or assignment requests (item 8e on Form IA-473) to determine whether the subject was sensitive or not. As with any paper study, this approach can lead to misinterpretation of the facts.

In some cases, the subjects specified in the request may be related to or even specifically included on the sensitive subjects list; however, the technical expert in the field may determine that the visit will not involve access to any sensitive information in that broad category, relating instead to non-sensitive information (e.g., magnetic fusion and reactor safety).

Page 2 of Response to Question 11b

We have reviewed the cases cited by GAO, as well as all visits and assignments to the weapons laboratories during the period of the GAO study, to determine the potential sensitivity of each. While the subjects listed on the visit requests could imply that a sensitive subject was involved, we have been assured by the laboratories, through their respective field offices, that the actual discussions and interactions did not involve any information that should not have been disclosed to the visitor or assignee.

QUESTION 11c: THE NEW DOE "INTERIM POLICY GUIDANCE" (DATED 10/20/88) REQUIRES THAT INDICES CHECKS AND SECURITY PLANS BE PREPARED AND COMPLETED PRIOR TO ANY VISIT OR ASSIGNMENT TO ANY WEAPON COMPLEX FACILITY INVOLVING A CITIZEN OF A SENSITIVE COUNTRY, A SENSITIVE SUBJECT, OR A NATIONAL OF A NON-SENSITIVE COUNTRY VISITING OR ASSIGNED TO A SECURITY FACILITY. IS IT THE DEPARTMENT'S INTENTION TO INCORPORATE THIS "INTERIM" GUIDANCE IN ITS PENDING REVISION OF DOE ORDER 1240.2?

Response: Yes. The new visits and assignments Order incorporates all of the provisions of the interim policy guidance for weapons complex and production facilities and extends these requirements beyond the weapons complex to all other sensitive DOE facilities.

In response to your request at the October 11, 1988, hearing on the GAO report, the Assistant Secretary for Defense Programs issued interim policy guidance to all DOE weapons complex and production facilities, including the three laboratories studied for the GAO report. The provisions of this guidance forbid access by nationals of sensitive countries to security facilities (known as secure areas in the previous Order) within these facilities. They also require indices checks to be completed and specific security plans to be approved prior to any visit or assignment involving a national of a sensitive country, a sensitive subject, or access by a national of a non-sensitive country to a security facility.

Under the new Order, tighter restrictions are also placed on non-sensitive facilities. The ban on access by a national of a sensitive country to a security facility is extended to include all DOE facilities. In addition, indices checks must be completed and specific plans approved prior to any visit

Page 2 of Response to Question 11c

or assignment to a security facility or involving a sensitive subject. Indices checks must also be completed before assignments by any national of a sensitive country to any non-sensitive facility.

QUESTION 12a:	WHO DOES CURRENT DOE REGULATIONS IDENTIFY AS RESPONSIBLE FOR SUBMITTING, REVIEWING, AND APPROVING SECURITY PLANS FOR VISITORS AND/OR ASSIGNEES?
Response:	Under the new Order, programmatic and security personnel will jointly develop security plans that will be approved by the local security officer at the field office level. The adequacy of the security plan is to be a factor that decision-makers must consider in determining whether to approve a visit or assignment. The new Order specifically indicates that a visit or assignment will be disapproved if, in the opinion of the approval authority, or in specific cases the Assistant Secretary for Defense Programs, it is not practical to implement adequate security procedures. The new Order also requires security plans for all visits and assignments. Specific Security Plans, which are described in detail in an attachment to the new Order, are required for visits and assignments to any security facility dealing with a sensitive subject or by a foreign national of a sensitive country to a sensitive facility. Otherwise, standard security plans as embodied in established DOE security directives and documents would apply.

QUESTION 12b: DOE TESTIFIED THAT SECURITY PLANS WERE DOE'S PRIMARY MEANS BY WHICH POTENTIALLY SENSITIVE VISITS AND ASSIGNMENTS ARE CONTROLLED. MR. DU VAL TOLD SENATOR GLENN THAT "THERE ARE SECURITY PLANS AT ALL LABORATORIES PRIOR TO ANY FOREIGN VISITOR COMING IN -- I CAN MAKE THAT A FACTUAL STATEMENT SIR." YET GAO FOUND THAT ONLY 35 PERCENT OF REQUIRED SECURITY PLANS WERE PREPARED AND SUBMITTED TO DOE PRIOR TO SUCH VISITS. IF GAO'S FINDING IS CORRECT, PLEASE EXPLAIN THE INCONSISTENCY AND DESCRIBE HOW DOE ENSURES THAT SECURITY THREATS ARE ADDRESSED DURING THOSE VISITS/ASSIGNMENTS THAT OCCUR WITHOUT SECURITY PLANS IN PLACE.

Response: Mr. Du Val was referring to basic DOE physical security policy which was in effect during the time of the GAO review and which was embodied in DOE Order 5632.4, Physical Protection of Security Interests, November 4, 1985. That policy required certain minimum security controls to be in effect at all DOE facilities having DOE security interests (e.g., classified matter, special nuclear material, and sensitive compartmented information facilities). The security plan for each facility was contained in the site-specific security plan for the facility and described the systems and procedures implemented and planned to protect Departmental security interests during visits and assignments.

A basic element of the security plan was that persons without appropriate access authorizations (such as visitors and assignees) or certification for the area visited, would be escorted at all times within security areas (physically defined spaces established to protect security interests and subject to physical protection and access controls) in which unsecured security interests were located. Further, there were other required elements to protect security interests, such as

Page 2 of Response to Question 12b

clearly defined barriers, personnel access controls, and visitors logs. Implementation of the above security measures provides for protection of Departmental security interests against uncleared visitors and assignees.

DOE Order 1240.2, January 5, 1981, required Field Office Managers to "develop and institute appropriate security plans necessary for the control of foreign nationals proposed for visits and assignments at sensitive facilities or to facilities where the protection of classified information or materials is necessary." This is the requirement that GAO was probably referring to and the Department agrees that one laboratory was not providing all necessary security plans at the time of the the GAO study. However, during the past year DOE, field offices, and laboratories have been working together to improve security plans and ensure they are in place when required. The new visits and assignments Order specifies new criteria for developing improved security and clarifies when Specific Security Plans over and above security requirements described in site-specific security plans are required.

QUESTION 12c: PLEASE IDENTIFY ALL CHANGES THAT HAVE BEEN MADE IN THE LAST FIVE YEARS IN THE DESIGN OF THE GENERIC SECURITY PLAN AT THE WEAPONS LABORATORIES.

Response: In the last five years, Los Alamos has not identified any need to change its generic security plans for visits and assignments. Over the same period, Sandia and Livermore used only Specific Security Plans tailored for each visit or assignment.

QUESTION 13:

Response to this question contains classified information and is included in the classified portion of the response.

QUESTION 14: GAO FOUND THAT THE REQUIREMENT FOR INDICES CHECKS CAN BE WAIVED BY CERTAIN OFFICES, IN CERTAIN CIRCUMSTANCES. PLEASE GIVE US SOME SPECIFICS. IS THE WAIVER PROCESS DEFINED IN DOE PROCEDURES?

Response: Under paragraphs 7d(3) and 8i(1)(c) of DOE Order 1240.2, which was in place at the time of the GAO analysis, "Results of indices checks are not necessary for feasibility determination or visit or assignment approval." The GAO cited Livermore as having acquired waivers from SAN for indices checks for some visitors/assignees. In most cases, these waivers were granted verbally by SAN, if Headquarters agreed.

Often waivers were granted with the approval of a Headquarters program office to meet the time exigencies of a visit. Such waivers came with the understanding that the visit could begin while the indices checks were being completed.

The DOE has recognized this vulnerability and the new Order 1240.2A, paragraph 9f, specifies that waivers to the indices check requirements can only be granted by the Assistant Secretary for Defense Programs on a case-by-case basis.

QUESTION 15: WE ARE INFORMED THAT NATIONAL SECURITY DECISION DIRECTIVE #197 (OF NOVEMBER 1, 1985) REQUIRES DOE AND CONTRACTOR EMPLOYEES TO REPORT HOSTILE CONTACTS BY FOREIGN NATIONALS.

GAO COULD NOT FIND ANY SUCH REPORTS DURING ITS YEAR-LONG INVESTIGATION, AND DOE CONFIRMED IN TESTIMONY THAT THEY KNEW OF NO SUCH REPORTS "IN THE NEAR-TERM." HAVE ANY REPORTS IN FACT BEEN REPORTED TO DOE SINCE THAT DIRECTIVE HAS BEEN ISSUED? IF NOT, DOES THE DEPARTMENT BELIEVE THAT THIS DIRECTIVE IS NOT BEING IMPLEMENTED, OR DOES THE DEPARTMENT BELIEVE THAT THERE HAVE IN FACT BEEN NO "HOSTILE CONTACTS?"

Response: The DOE has not received any reports of hostile contacts by foreign nationals. The NSDD requirement to report hostile contacts is specifically cited on page 17 of the DOE Security Education Handbook (copy attached). While we agree with the point made by the laboratories, that all foreign visits are to be considered as potentially hostile contacts, we also recognize the need for more active efforts to make DOE and contractor personnel aware of the threat of hostile intelligence initiatives. DOE has initiated a more active counterintelligence effort which includes security awareness programs and training in reporting attempts by foreign nationals to obtain sensitive or classified information. In this regard, DOE Headquarters is preparing guidance to the field in implementing the requirements of revised DOE Order 1240.2A and this guidance will include instructions on documenting foreign visits/assignments and for reporting suspicious contacts by foreign nationals.

DOE will also include a review of the security education programs in its reviews of the field security programs at the various facilities.

SECURITY EDUCATION HANDBOOK

Prepared by the
Office of Safeguards and Security
United States Department of Energy
Washington, D.C.

intelligence agents working in this country are willing to try any means to gain this valuable information. Compromised classified information could severely damage America's national security and the effectiveness of certain ongoing programs, and we must all work together to prevent this from happening.

WHAT CAN YOU DO?

- Make sure that documents you are working with are properly handled at all times.
- Be extremely careful about conversations relating to classified topics.
- Notify security officers of any security incidents, approaches, or contacts by foreign nationals or representatives of foreign governments, or those you might suspect as such.

REPORTING HOSTILE CONTACTS

All DOE employees, contractors, consultants, or other individuals possessing a DOE access authorization are required by the National Security Decision Directive, NSDD 197, to report any contact with individuals of any nationality, including U.S. citizens, either within or outside the scope of the individuals official activities, in which:

- Illegal or unauthorized access is sought to classified or sensitive information, technology, or special nuclear material.

- The individual believes that he/she may be the target of attempted exploitation by a foreign entity.

Additionally, each individual must report any unofficial contact with individuals from Communist-Bloc countries. The contact must be reported immediately to the local security officer or contractor security representative.

QUESTION 16: DOE REGULATIONS REQUIRE THAT "HOST REPORTS" BE FILED BY THE LABS AFTER VISITS AND/OR ASSIGNMENTS INVOLVING CERTAIN FOREIGN VISITORS AND ASSIGNEES:

HAVE THE LABS BEEN FULLY COMPLYING WITH THIS REQUIREMENT, BOTH IN TERMS OF TIMELINESS AND CONTENT? WHAT ARE DOE'S ENFORCEMENT MECHANISMS FOR ACHIEVING COMPLIANCE? PLEASE PROVIDE US WITH A COUNT OF THE NUMBER OF HOST REPORTS THAT WERE CORRECTLY FILED SINCE JANUARY 1986 VS. THE NUMBER THAT WERE REQUIRED.

Response: The laboratories have not been fully complying with the host report requirement. Since January 1987, host reports for 127 of 235 visits/assignments at the weapons laboratories were correctly filed as required by DOE 1240.2.

Host reports are important for both programmatic and security reasons. Such reports have been required for visits and assignments by foreign nationals of communist-controlled countries and for visits and assignments involving sensitive subjects, if not under an international agreement; for sensitive countries coupled with sensitive subjects; for sensitive countries at secure areas of sensitive facilities; and for high-level foreign nationals.

The new Order simplifies content requirements for host reports, but increases the numbers of visits and assignments for which they are to be submitted. Compliance with this requirement will be enforced through periodic oversight of field records of host reports. It is expected that a capability for tracking submission of host reports will be one component of the DOE-wide management information system for visits and assignments which is to be developed.

QUESTION 17:

Response to this question contains classified information and is included in the classified portion of the response.

QUESTION 18: Mr. DU VAL STATED THAT THERE WAS IN DOE "NO CENTRALIZED DATA BASE" CONCERNING FOREIGN VISITORS AND HOSTILE CONTACTS INVOLVING DOE OR LAB EMPLOYEES. MR. DU VAL ADDED THAT "WE PLAN...TO REQUIRE ESTABLISHING A CENTRAL DATA BASE". FIVE YEARS AGO, A STUDY DONE BY THE MERIDIAN CORPORATION FOR DOE MADE THE FOLLOWING RECOMMENDATION: "A COMPREHENSIVE STUDY SHOULD BE INITIATED TO DETERMINE THE FEASIBILITY OF USING AUTOMATED DATA PROCESSING FOR COMMUNICATING, STORING AND ANALYZING ALL STATISTICAL INFORMATION RELATED TO VISITS, ASSIGNMENTS, AND FOREIGN TRAVEL REQUESTS." WHY HAS IT TAKEN SO LONG FOR DOE TO RESPOND TO THIS NEED? DOES SUCH A DATA BASE EXIST TODAY?

Response: Mr. Du Val correctly stated that there is no centralized data base which deals with both foreign visitors and with hostile contacts involving DOE or laboratory employees. There is, however, a limited data base at DOE Headquarters established in the Office of International Affairs during 1985, and steadily improved since then, which includes some data from all visit and assignment requests received at Headquarters. This data base includes virtually all assignments, and all visits except those for which a request is not required, primarily non-sensitive visits. This is a simple computer-aided system which tracks the flow of approvals for visits and assignments within Headquarters and provides record-keeping for all assignments and for most sensitive visits. It can be used for data analysis by date, country, laboratory, subject matter, etc.

Work is currently in progress on an integrated DOE-wide computer-based system to manage and provide information on visits and assignments, and to meet DOE requirements for timeliness, accuracy, completeness of information, and for

Page 2 of Response to Question 18

analysis of international cooperation. The system is expected to utilize the Headquarters mainframe computer and to link Headquarters program offices, IE, DP, Operations Offices, and principal laboratories which have significant numbers of visitors or assignees. A Steering Committee which includes representatives of IE, DP, Energy Research, Management and Administration, and two key operations offices have been appointed to guide system development, and the Headquarters computer contractor is conducting the requirements analysis phase of development.

QUESTION 19: PLEASE IDENTIFY ALL FOREIGN VISITS OR ASSIGNMENTS TO THE LABS THAT HAVE BEEN REQUESTED OR ARRANGED BY FEDERAL OFFICES AND AGENCIES OTHER THAN DOE, FROM JANUARY 1986 TO THE PRESENT.

Response: Foreign visits or assignments to DOE laboratories may be requested by any of a number of Federal agencies, most commonly by the Department of State, the National Science Foundation, and by the Department of Defense.

Because the visit or assignment request is made to the laboratory by the agency concerned, and is shown in our records as having been requested by that laboratory in connection with a particular program, our records do not ordinarily show which Federal agency made the request.

QUESTION 20:	DOES DOE INTENDED TO AMEND ANY REGULATIONS OTHER THAN DOE ORDER 1240.2 CONCERNING CONTROLS OVER UNCLASSIFIED NUCLEAR INFORMATION (E.G, 10 CFR 810; 10 CFR 1017; 15 CFR 778; AND 15 CFR 779)? PLEASE EXPLAIN AND/OR DOCUMENT; AND PLEASE SUPPLY FOR THE RECORD COPIES OF ALL SUCH REGULATIONS (INCLUDING THOSE LISTED ABOVE).
Response:	The DASSA regularly reviews U.S. regulations dealing with unclassified nuclear information to identify recommended additions, deletions, and modification. At this time, DOE has no outstanding recommendations for changes to the regulations cited. Copies of the current versions of the cited regulations are attached as requested.
ATTACHMENTS:	10 CFR 810 10 CFR 1017 15 CFR 778 15 CFR 779

federal register

Wednesday
December 10, 1986

ATTACHMENT FOR QUESTION 20
10 CFR 810

Part II

Department of Energy

10 CFR Part 810

Assistance to Foreign Atomic Energy Activities; Final Rule

DEPARTMENT OF ENERGY

10 CFR Part 810

Assistance to Foreign Atomic Energy Activities

AGENCY: Department of Energy.

ACTION: Final rule.

SUMMARY: The Department of Energy (DOE) is revising its regulations 10 CFR Part 810 concerning unclassified assistance to foreign atomic energy activities. The primary aims of the revision are to clarify, simplify, and reduce uncertainties about which activities are generally authorized and which require specific authorization. The previous regulations are substantially altered in language and structure but much of the content is retained. For generally authorized activities, the new regulations first describe activities generally authorized for all countries and then activities generally authorized except for certain designated countries. The previous list of countries to which certain general authorizations do not apply has been updated. The general authorization for helping to prevent or correct a radiological emergency, which had been limited to a radiological emergency in an operating nuclear power plant, has been expanded. The general authorization for participating in international meetings becomes a general authorization for participating in "open meetings sponsored by educational, scientific, or technical organizations or institutions" and the term "open meetings" is defined. Other significant new features include a definition of "public information," reporting requirements on specifically authorized activities, and notice that DOE may make public a grant of specific authorization unless the applicant shows that disclosure will cause substantial harm to its competitive position. When the revision was published as a Proposed Rule in the Federal Register May 28, 1986, DOE set 45 days for public comment. Following consideration of submitted views, DOE now publishes a revised Part 810 Final Rule.

EFFECTIVE DATE: These regulations are effective on December 10, 1986.

FOR FURTHER INFORMATION CONTACT:

Mr. John M. Rooney, Chief, Operations Branch, Office of International Security Affairs, DP-332.1, U.S. Department of Energy. Telephone (202) 252-2129

Mr. Robert Newton or Mr. Charles Oleszycki, Attorneys, Office of the General Counsel, GC-31, U.S. Department of Energy. Telephone (202) 252-6975.

SUPPLEMENTARY INFORMATION:

1. Background

10 CFR Part 810 implements section 57b(2) of the Atomic Energy Act of 1954, as amended by Section 302 of the Nuclear Non-Proliferation Act of 1978 (NNPA) (42 U.S.C. 2156). These sections require that U.S. persons who engage directly or indirectly in production of special nuclear material outside the United States be authorized to do so by the Secretary of Energy. The Secretary has granted general authorizations for certain activities, but other activities require specific authorization. All requests to the Secretary for specific authorization are treated in accordance with the procedures required by section 302 of the NNPA and agreed to by the Departments of Energy, State, Commerce and Defense, the Arms Control and Disarmament Agency, and the Nuclear Regulatory Commission. These implementing procedures were published in the Federal Register May 16, 1984, under the title "Procedures Established Pursuant to the Nuclear Non-Proliferation Act of 1978" (49 FR 20780).

2. Regulatory Changes

The major changes to Part 810 are summarized below:

A. *Title:* The title is changed from "Unclassified Activities in Foreign Atomic Energy Programs" to "Assistance to Foreign Atomic Energy Activities."

B. *Section 810.2. Scope:* Examples of persons, locations, and activities to which the regulations apply are explained in greater detail.

C. *Section 810.3 Definitions:* Definitions are deleted for "commission," "department," "nuclear material," "retransfer," and "Secretary." Definitions are added for "general authorization," "open meeting," "public information," "production reactor," "special nuclear material," and "specific authorization." Minor and nonsubstantive changes in wording are made in the definitions of "Act," "classified information," "nuclear reactor," "person," "sensitive nuclear technology," and "source material."

D. *Section 810.5 Interpretations:* DOE clarifies the previous procedure by which members of the public may request an opinion from the Department and transfers this subject from § 810.11 (Additional information) of the previous regulations to this section in the new regulations.

E. *Section 810.7 Generally authorized activities:* The previous regulations combined both generally authorized and specifically authorized activities in one section. The new regulations separate them into two different sections: Section 810.7 on generally authorized activities and § 810.8 on specifically authorized activities.

In § 810.7, the general authorization to assist in emergencies at operating nuclear power plants is expanded to cover any current or imminent radiological emergency posing a significant danger to public health or safety, provided the Department of Energy is notified in advance and does not object. The general authorization for participating in exchange programs approved by the Department of State is conditioned upon Department of State consultation with the Department of Energy. The general authorization for participation in international meetings is narrowed by limiting these to "open meetings sponsored by educational, scientific, or technical organizations or institutions" and by defining "open meetings." The list of countries for which certain general authorizations do not apply (contained in the new Section 810.8) is updated. Participation approved by a U.S. Government agency in programs of the International Atomic Energy Agency (IAEA) and activities by IAEA employees whose employment was approved by the U.S. Government are explicitly stated to be generally authorized.

F. *Section 810.8 Activities requiring specific authorization:* This section requires specific authorization for engaging directly or indirectly in the production of special nuclear material for the listed countries. For unlisted countries, specific authorization is required only for certain kinds of activities.

G. *Section 810.9 Restrictions on general and specific authorizations:* A provision is added explicitly barring assistance under either authorization when a person knows or has reason to know that the activity is intended to assist in a nuclear explosives program.

H. *Section 810.10 Grant of specific authorization:* This section provides notice that a decision granting specific authorization may be publicly disclosed unless the recipient shows that disclosure will cause substantial harm to its competitive position.

I. *Section 810.12 Information required in an application for specific authorization:* The applicant is now required to designate any "proprietary information" in an application.

J. *Section 810.13 Reports:* Reporting requirements are added for some activities and eliminated for others.

Reports are required on all specifically authorized activities. Instead of listing generally authorized activities which require reports and those which do not, the revision lists only those which do.

3. Statutory Requirements

Pursuant to Section 57b. of the Atomic Energy Act as amended by the NNPA, with the concurrence of the Department of State and after consultations with the Departments of Commerce and Defense, the Arms Control and Disarmament Agency, and the Nuclear Regulatory Commission, the Secretary of Energy has determined that granting the general authorizations in this revision of 10 CFR Part 810 will not be inimical to the interest of the United States.

4. Savings Clause

Except for actions which may be taken by DOE pursuant to § 810.11, this revision does not affect specific authorizations granted under the previous regulations. Persons engaging in activities generally authorized under the previous regulations but requiring specific authorization under the new regulations must request such specific authorization within 90 days of the effective date of these regulations; however, persons who have requested such authorization may continue their activities until DOE acts on their request.

5. Rulemaking Requirements

Section 501(a)(1) of the DOE Organization Act (Pub. L. 95-91) provides that the provisions of Subchapter II of Chapter 5 of Title 5, United States Code (commonly known as the Administrative Procedure Act or APA) shall apply in accordance with their terms to any rule or regulation issued pursuant to authority vested by law in, or transferred or delegated to, the Secretary of Energy. Section 553(a)(1) of Title 5 U.S.C. provides an exemption to the normal notice and comment procedures for rules involving a foreign affairs function of the United States.

Because Part 810 deals with nuclear-related exports and activities that assist in the production of special nuclear material abroad, this revision involves the foreign affairs functions of the United States. Therefore, the exemption of Section 553(a)(1) applies and notice and comment were not required. Nevertheless, DOE provided interested persons 45 days in which to submit comments on the Proposed Rule. These comments are addressed in Section 7 of the Supplementary Information.

Because notice and comment were not required for this rule, this rule is not subject to the requirements of the Regulatory Flexibility Act, 5 U.S.C. 601 et seq. as provided in Section 601(2). This rule is also not subject to the requirements of Executive Order 12291 (46 FR 13193, February 19, 1981), because it relates to a foreign affairs function of the United States. See Section 1(a)(2).

6. Paperwork Reduction Act

The Office of Management and Budget (OMB) has reviewed and approved the information collections in this Final Rule.

7. Review of Comments

DOE published a Proposed Rule version of these regulations in the Federal Register May 28, 1986 (51 FR 19218). Written comments were received from ten parties. These comments have been available for public inspection in the DOE Reading Room during consideration of this Final Rule.

As a result of comments received, the following changes in the Proposed Rule were either made or considered and rejected:

A. Section 810.1 Purpose

Two commenters suggested an additional purpose of the regulations should be to indicate activities which lie outside the scope of Part 810 and thus require neither general nor specific authorization. This suggestion was not accepted for reasons explained immediately below.

B. Section 810.2 Scope

The comments cited above proposed that this section include specific examples of activities outside the scope of Part 810. DOE believes that this is not practical because the range and variety of possible activities outside the scope is so great. Moreover, any examples cited would be so clearly outside the scope as to be self-evident (e.g., uranium exploration) and therefore not helpful. When the applicability of Part 810 to a proposed activity is not clear, DOE remains ready to advise whether the activity falls within the scope or not.

Several comments expressed concern over the term "assistance" as being too broad and proposed it be defined and limited. Instead, DOE has substituted the term "activities" as being less vague. At the same time, DOE believes it would be unwise to specify that Part 810 applies only to "technical" activities or assistance because, while "technical" activities are the focus of the overwhelming majority of proposals, there may also be "non-technical" activities that could require authorization.

Several comments objected to the wording "may reasonably be expected to assist" as unduly vague and possibly conducive to unintentional violation of the regulations. This language has been deleted.

Several comments expressed concern over persons under U.S. jurisdiction being held responsible for independent activities of foreign licensees, contractors or subsidiaries. This concern has been addressed in the definition of "person" in Section 810.3 which now recognizes that the activities of a foreign entity may not be under the control of the person subject to U.S. jurisdiction.

Several comments urged that DOE make clear that exports under licensing authority of the Nuclear Regulatory Commission (10 CFR Part 110) are not subject to Part 810. This has always been the case, but DOE has now explicitly stated it in the regulations.

C. Section 810.3 Definitions

Several comments pointed out that the definition of "production reactor" could be construed as applying to power or breeder reactors. This was not the intent and DOE has clarified the definition.

Many valuable comments were received on the definition of "public information." The definition has been revised to take account of concerns over distribution of non-proprietary information by many firms, information available to a "community of persons interested in a subject matter" rather than to the public at large, information presented at open meetings, and information made available to the public simultaneous with its transmission to a foreign recipient, for example in U.S. technical journals that are distributed abroad. It also now makes clear that public information may include technical embellishment, enhancement, explanation and interpretation, but only if these themselves constitute public information.

To ensure that the general authorization for public information presented at open meetings is properly utilized, DOE has added a definition of the term "open meetings" to this section.

As for a suggestion that "public information" should include information which "may be made available" under the Freedom of Information (FOI) Act, rather than information which "has been made available," DOE believes the former would call for prophecy rather than the deliberate review required for an FOI determination and hence is not feasible.

Several comments called for more precise definition of "sensitive nuclear technology" (SNT). DOE has used the definition of the Nuclear Non-Proliferation Act and believes that Congress drafted the definition in full knowledge that making SNT determinations called for technical expertise, experience and judgment applied on a case-by-case basis. In making SNT determinations, DOE considers many factors, such as the activity's relationship to the actual process of producing SNM, the activity's effect on the success of a project, and the technical capability of the recipient country in the fuel cycle area of concern.

D. Section 810.5 Interpretations

For reasons of DOE policy, the Division of Politico-Military Security Affairs (PMSA) is not empowered to issue binding interpretations of these regulations, as some comments proposed. As a matter of practice, however, PMSA will continue to provide advice, both oral and written, on primarily technical questions, obtaining the guidance of the Office of the General Counsel when appropriate. DOE recognizes that both advice and binding interpretations should be provided in a timely manner. It should be noted, however, that these may involve complex and sensitive issues which, if dealt with hastily, could produce decisions ultimately inimical to U.S. interests. For this reason DOE believes it would be unwise to set a rigid time limit for responding to requests, as urged in some comments. However, DOE has revised this section to require that when advice is requested from PMSA or a binding, written interpretation is requested from the General Counsel, a response normally will be made within 30 days and, if this is not feasible, an interim response will explain the delay.

E. Section 810.7 Generally authorized activities

Some comments suggested there should be separate categories of general authorization for exports subject to Part 810 which are also subject to license by other agencies, such as the NRC or the Departments of State or Commerce. As noted earlier, these regulations do not apply to exports licensed by the NRC. As for granting general authorizations for exports subject to State or Commerce licensing, DOE believes this would be contrary to the intent of Section 57b of the Atomic Energy Act, which places on the Secretary the responsibility to determine whether authorizing an export covered by these regulations will not be inimical to the interest of the United States.

Another comment proposed a general authorization for providing "financial assistance" when an investor or lender does not excercise control over the foreign activity being financed. As made clear in the new definition of "person," these regulations apply only to the extent that persons under U.S. jurisdiction have control over the activities being conducted abroad.

One comment urged that § 810.7(a) on the general authorization for furnishing public information be modified to place this under tighter control, allowing only "previously published documents" to be disseminated under the authorization and requiring that "new documents" be submitted to DOE for specific authorization before being sent to a restricted country. DOE believes that the definition of public information makes this unnecessary; if a "new document" does not qualify as public information as defined in § 810.3, then it may not be exported as generally authorized public information.

A suggestion that the term "international meetings" in § 810.7(f) was ambiguous and should be changed to "open meetings" was accepted, especially because the Final Rule adds a definition for "open meeting." By adding this definition DOE also was able to respond to criticism of the Proposed Rule's § 810.7(f) which generally authorized participation only if it did not assist in enrichment, reprocessing, plutonium fuel fabrication or heavy water production. A scientific organization said this confronted meeting hosts with the question "Must we now choose between excluding foreigners from our meetings and eschewing discussion of enrichment, reprocessing or plutonium fuel fabrication at such meetings?" On reconsideration, DOE was unwilling to place either constraint on free discussion among scientists, engineers, educators and other professionals. In addition, DOE believes presentations at such meetings would qualify as generally authorized public information, inasmuch as papers presented without remuneration are hardly likely to go beyond what will be published in scholarly journals.

Several comments suggested § 810.7(g) left unclear whether there might be additional activities, other than those cited, which are generally authorized or require specific authorization; they proposed that use of statutory language in § 810.7(g) would help resolve the question. DOE has now adopted the statutory language and believes it makes clear that there are no activities within the scope of the regulations which are not either generally authorized or require specific authorization.

F. Section 810.8 Activities requiring specific authorization

One comment proposed this section be simplified by stating that *all* activities not explicitly subject to general authorization require specific authorization. DOE has not accepted this proposal because it believes it is helpful to users of Part 810 to list activities subject to specific authorization and to explain them in some detail; indeed, this is a main purpose in revising the regulations.

One comment suggested the list of "restricted countries" to which certain general authorizations do not apply should conform with the NRC's comparable list (10 CFR Part 110.29). As the commenter surmised, the disparity exists because DOE's list reflects nonproliferation, foreign policy and national security concerns, while the NRC list reflects primarily nonproliferation concerns.

DOE has not accepted proposals that the People's Republic of China be omitted from the list because of the recent U.S.–PRC Agreement for Cooperation, and notes that the list includes several other countries with whom the United States has nuclear cooperation agreements.

One comment criticized the requirement of specific authorization for training foreign nationals in certain nuclear activities as placing a new and "impossible burden" on the U.S. academic and nuclear business communities. In fact, the requirement constitutes no change. The commenter said that § 810.7(a)(2)(iv) of the previous rule required no specific authorization for training taking place in the United States or for training U.S. citizens anywhere. DOE agrees that no authorization at all, general or specific, was required for training U.S. citizens anywhere and this continues to be the case. But the previous rule did require authorization, either general or specific, for training foreign nationals either within or outside the United States. Thus, the burden imposed by these regulations is neither new nor "impossible," but a continuation of practices accepted for many years. DOE believes, however, that the criticism of the training provision may stem from a misunderstanding. University or college education in academic nuclear science and engineering subjects is not considered "training" for purposes of these regulations; rather, the content of such courses is "public information" as defined in § 810.3 and thus is generally authorized for all persons. Training, on the other hand, is generally instruction given outside academic institutions, the content is generally more specific and practical; it is given with an eye toward commercial application, and it is usually provided in specialized institutes or schools operated by nuclear industrial firms. Some kinds of training are outside the scope of Part 810. Other kinds of training are generally authorized for nationals of countries not on the "restricted list." DOE has always required specific authorization for training of foreign nationals from countries on the "restricted list" in any activities within the scope of Part 810, as well as training of any foreign nationals in the sensitive technologies.

Two commenters asked whether nuclear waste treatment such as vitrification was included in § 810.8(c)(1) through (5). Because of the often close relationship between nuclear waste and reprocessing, DOE must make such judgments on a case-by-case basis.

One comment proposed that the regulations should "prohibit" specific authorizations for transfers of sensitive technologies to "countries of high proliferation risk" and said this should apply to all countries on the restricted list. DOE disagrees. Some countries are on the "restricted list" not because they pose proliferation concerns but for foreign policy or national security reasons. Therefore, some flexibility is essential in making Part 810 determinations. U.S. nonproliferation policy precludes the transfer of sensitive nuclear technology to potential proliferants and DOE follows that policy in applying the Part 810 regulations. To ensure adherence to the policy the revised regulations make explicit the requirement for specific authorization for providing sensitive nuclear technology to any country, including countries not on the "restricted list."

Several commenters urged that specific authorization be required for designing, constructing, fabricating, operating or maintaining major critical components of production reactors or facilities for enrichment, reprocessing, plutonium fuel fabrication or heavy water production even when the components were not specially designed, modified or adapted for these purposes. After carefully considering this proposal, DOE agreed in regard to reactors and "production-scale" facilities (§ 810.8(c)(4)). In the past, DOE has required specific authorization for certain major critical components even when not specially designed, modified or adapted, when these constituted significant assistance to the facility. This provision only marginally expands the requirement for specific authorization. As for the term "production-scale," DOE means commercial or pilot facilities but not small research facilities. For example, major critical components not specially designed, modified or adapted would require specific authorization if destined for a commercial or pilot-scale reprocessing facility in any country; but the same components would not require specific authorization if destined for reprocessing research in a country not on the "restricted list."

G. Section 810.10 Grant of specific authorization

DOE has not accepted a suggestion that § 810.10(b)(3) should specify that this factor is considered only for non-nuclear-weapon states. As a practical matter, DOE considers the nuclear weapons status of recipient countries as a factor in making Part 810 determinations. However, it is U.S. policy to encourage nuclear-weapon states to make all their peaceful nuclear activities eligible for IAEA safeguards. By considering this factor even when the recipient country is a nuclear-weapon state, DOE reflects that policy.

DOE also has not accepted a proposal that the list of factors taken into account in making a Part 810 determination should be replaced by rigid criteria such as those applied by the NRC and that among these should be two "minimum standards": that the recipient country have both a nuclear cooperation agreement with the United States and comprehensive safeguards. There is a significant difference between the exports licensed by the NRC and the numerous and varied activities authorized by DOE. While the NRC controls only complete facilities, materials, and specially designed components, DOE controls nuclear-related services, technology, certain equipment and other assistance. Activities subject to Part 810 vary in significance from a nuclear proliferation standpoint and may be of less proliferation significance than NRC-controlled exports. DOE believes it would be inappropriate and possibly adverse to U.S. nonproliferation policy and objectives to impose rigid criteria regardless of the significance of the activity. When a Part 810-authorized activity is of comparable proliferation significance to an NRC-licensed export, the Secretary of Energy is able to impose any necessary conditions, such as requiring a peaceful use assurance or prior consent rights over retransfer.

One commenter urged that specific authorizations be published in the Federal Register instead of being made available on request after 30 days unless the applicant shows this will harm its competitive position. DOE believes making them available on request is the most efficient way to inform interested persons and intends to place copies of the authorizations routinely in the DOE Reading Room, where they will be freely accessible to all interested persons; this will be done approximately 30 days after an authorization is granted so an applicant will have an opportunity to request protection of proprietary information.

Another comment proposed eliminating the 30 day waiting period before disclosing specific authorizations. DOE has retained the waiting period so that any proprietary claims by applicants may be submitted and reviewed.

As for a proposal that approved specific authorizations should be periodically reported to Congress, DOE notes that as a matter of policy and practice it fully cooperates with any congressional interest in its actions under Part 810.

H. Section 810.11 Revocation, suspension modification of authorization

One comment said the term "material false statement" in § 810.11(a) had become the subject of dispute in NRC practice and proposed DOE provide its own definition or use other language. DOE believes the term, whose meaning has not been disputed during its many years of use in the Part 810 regulations, remains appropriate and needs no definition in these regulations at this time.

I. Section 810.13 Reports

DOE did not accept a suggestion that all new reporting requirements be eliminated as "largely unnecessary." On the basis of experience, DOE believes these requirements are desirable to keep DOE abreast of the activities of U.S. persons engaged in foreign nuclear activities; this will assist in meeting DOE's statutory responsibilities, its commitments to U.S. nonproliferation policy and foreign policy and national security interests, and its obligations to respond to congressional concerns. DOE also did not accept suggestions that reporting be eliminated for financial assistance and for exports licensed by other agencies. As noted previously, exports licensed by the NRC are not subject to Part 810; and, contrary to the understanding of one commenter, exports subject to Part 810 as well as licensing by the Departments of State and Commerce were subject to the reporting provisions of the previous Part 810 regulations. As for financial assistance, this revision makes it subject to reporting only to the extent that persons under U.S. jurisdiction have control over the activities being conducted abroad.

In the interests of clarity, however, DOE has accepted a suggestion that activities generally authorized under § 810.7 (a), (c), (d), (e) and (f) be expressly excluded from reporting requirements.

DOE also has accepted proposals that a recipient of a specific authorization report: (1) When the activity is completed; (2) when the activity is terminated prior to its completion; or (3) when it is known that the proposed activity will not be undertaken and the granted authorization will not be used. DOE has added these reporting requirements because it believes the information will enable DOE to better satisfy the responsibilities, commitments and obligations cited earlier. However, a proposal to require periodic status reports was not accepted because DOE believes these would impose a paperwork burden to little purpose; for if the status of an activity in progress came into question, DOE would necessarily have to establish the current status and not the status at the time of a periodic report that was, for example, six months old.

J. Section 810.16 Effective date

One comment urged that the savings provision in this section be changed to include extensions of existing contracts, orders or licenses, at least where such extensions were expressly contemplated by documents executed before these regulations became final, and so long as such extensions did not expand the scope of the authorized activities. DOE has not accepted this suggestion because to do so might in effect confer perpetuity on some authorizations. On the contrary, DOE notes that when the last revision of these regulations on September 17, 1982 "grandfathered" existing arrangements, it was done in the expectation that these would be completed within a reasonable period. DOE believes the four years since were an ample transition period. Moreover, reports were required on such activities and none of the reports received indicate a need for a prolonged transition. Therefore this revision eliminates the savings clause for generally authorized activities "grandfathered" by the previous regulations. As noted earlier, any affected person is required to apply for specific authorization within 90 days but may continue the activities until DOE acts on the application.

List of Subjects in 10 CFR Part 810

Foreign relations, Nuclear energy, Reporting and recordkeeping requirements.

For the reasons set out in the preamble, Part 810 of Title 10 of the Code of Federal Regulations is revised as set forth below.

Issued at Washington, DC, December 1, 1986.

S.R. Foley, Jr.,

Assistant Secretary for Defense Programs.

PART 810—ASSISTANCE TO FOREIGN ATOMIC ENERGY ACTIVITIES

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Authority: Secs. 57, 127, 128, 129, 161, and 223, Atomic Energy Act of 1954, as amended by the Nuclear Non-Proliferation Act of 1978, Pub. L. 95–242, 68 Stat. 932, 948, 950, 958, 92 Stat. 126, 136, 137, 138 (42 U.S.C. 2077, 2156, 2157, 2158, 2201, 2273); Sec. 104 of the Energy Reorganization Act of 1974, Pub. L. 93–438; Sec. 301, Department of Energy Organization Act, Pub. L. 95–91.

§ 810.1 Purpose.

These regulations implement section 57b of the Atomic Energy Act which empowers the Secretary of Energy to authorize U.S. persons to engage directly or indirectly in the production of special nuclear material outside the United States. Their purpose is to:

(a) Indicate activities which have been generally authorized by the Secretary of Energy and thus require no further authorization;

(b) Indicate activities which require specific authorization by the Secretary and explain how to request authorization; and

(c) Explain reporting requirements for various activities.

§ 810.2 Scope.

10 CFR Part 810:

(a) Applies to all persons subject to the jurisdiction of the United States who engage directly or indirectly in the production of special nuclear material outside the United States.

(b) Applies to activities conducted either in the United States or abroad by such persons or by licensees, contractors or subsidiaries under their direction, supervision, responsibility or control.

(c) Applies, but is not limited to, activities involving nuclear reactors and other nuclear fuel cycle facilities for the following: fluoride or nitrate conversion; isotope separation (enrichment); the chemical, physical or metallurgical processing, fabricating, or alloying of special nuclear material; production of heavy water, zirconium (hafnium-free or low-hafnium), nuclear-grade graphite, or reactor-grade beryllium; production of reactor-grade uranium dioxide from yellowcake; and certain uranium milling activities.

(d) Does not apply to exports licensed by the Nuclear Regulatory Commission.

§ 810.3. Definitions.

As used in Part 810:

"Agreement for cooperation" means an agreement with another nation or group of nations concluded under Sections 123 or 124 of the Atomic Energy Act.

"Atomic Energy Act" means the Atomic Energy Act of 1954, as amended.

"Classified information" means National Security Information classified under Executive Order 12356 or any superseding order, or Restricted Data classified under the Atomic Energy Act.

"General authorization" means an authorization granted by the Secretary of Energy under section 57b(2) of the Atomic Energy Act to provide certain assistance to foreign atomic energy activities and which is effective without a specific request to the Secretary or the issuance of an authorization to a particular person.

"IAEA" means the International Atomic Energy Agency.

"NNPA" means the Nuclear Non-Proliferation Act of 1978.

"NPT" means the Treaty on the Non-Proliferation of Nuclear Weapons.

"Nuclear reactor" means an apparatus, other than a nuclear explosive device, designed or used to sustain nuclear fission in a self-supporting chain reaction.

"Open meeting" means a conference, seminar, trade show or other gathering that all technically qualified members of the public may attend and at which they may make written or other personal record of the proceedings.

notwithstanding that (1) a reasonable registration fee may be charged, or (2) a reasonable numerical limit exists on actual attendance.

"Person" means (1) any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government agency other than the Department of Energy, any State or political entity within a State; and (2) any legal successor, representative, agent or agency of the foregoing. Persons under U.S. jurisdiction are responsible for their foreign licensees, contractors or subsidiaries to the extent that the former have control over the activities of the latter.

"Production reactor" means a nuclear reactor specially designed or used primarily for the production of plutonium or uranium-233.

"Public information" means: (1) Information available in periodicals, books or other print or electronic media for distribution to any member of the public, or to a community of persons such as those in a scientific, engineering, or educational discipline or in a particular commercial activity who are interested in a subject matter; (2) Information available in public libraries, public reading rooms, public document rooms, public archives, or public data banks, or in university courses; (3) Information that has been presented at an open meeting (see definition of "open meeting"); (4) Information that has been made available internationally without restriction on its further dissemination; or (5) Information contained in an application which has been filed with the U.S. Patent Office and eligible for foreign filing under 35 U.S.C. 184 or which has been made available under 5 U.S.C. 552, the Freedom of Information Act. Public information must be available to the public prior to or at the same time as it is transmitted to a foreign recipient. It does not include any technical embellishment, enhancement, explanation or interpretation which in itself is not public information, or information subject to Sections 147 and 148 of the Atomic Energy Act.

"Restricted Data" means all data concerning (1) design, manufacture or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to Section 142 of the Atomic Energy Act.

"Sensitive nuclear technology" means any information (including information incorporated in a production or utilization facility or important component part thereof) which is not available to the public (see definition of "public information") which is important to the design, construction, fabrication, operation, or maintenance of a uranium enrichment or nuclear fuel reprocessing facility or a facility for the production of heavy water, but shall not include Restricted Data controlled pursuant to Chapter 12 of the Atomic Energy Act. The information may take a tangible form such as a model, prototype, blueprint, or operation manual or an intangible form such as technical services.

"Source Material" means: (1) Uranium or thorium, other than special nuclear material or (2) ores which contain by weight 0.05 percent or more of uranium or thorium, or any combination of these.

"Special nuclear material" means (1) plutonium, (2) uranium-233, or (3) uranium enriched above 0.711 percent by weight in the isotope uranium-235.

"Specific authorization" means an authorization granted by the Secretary of Energy under section 57b(2) of the Atomic Energy Act to a person to provide specified assistance to a foreign atomic energy activity in response to an application filed under 10 CFR Part 810.

"United States", when used in a geographical sense, includes all territories and possessions of the United States.

§ 810.4 Communications.

All communications concerning these regulations should be addressed to: U.S. Department of Energy, Washington, DC 20585. Attention: Director, Division of Politico-Military Security Affairs, DP-332, Office of International Security Affairs. Telephone: (202) 252-2112.

Communications also may be delivered to the Department's headquarters at 1000 Independence Avenue, SW., Washington, DC. All clearly marked proprietary information will be given the maximum protection allowed by law.

§ 810.5 Interpretations.

A person may request the advice of the Division of Politico-Military Security Affairs (PMSA) on whether a proposed activity falls outside the scope of Part 810, is generally authorized under § 810.7, or requires specific authorization under § 810.8; however, unless authorized by the Secretary of Energy in writing, no interpretation of these regulations other than a written interpretation by the General Counsel is binding upon the Department. When advice is requested from PMSA or a binding, written determination is requested from the General Counsel, a response normally will be made within 30 days and, if this is not feasible, an interim response will explain the delay.

§ 810.6 Authorization requirement.

Section 57b of the Atomic Energy Act in pertinent part provides that:

> It shall be unlawful for any person to directly or indirectly engage in the production of any special nuclear material outside of the United States except (1) as specifically authorized under an agreement for cooperation made pursuant to section 123, including a specific authorization in a subsequent arrangement under section 131 of this Act, or (2) upon authorization by the Secretary of Energy after a determination that such activity will not be inimical to the interest of the United States: *Provided*, That any such determination by the Secretary of Energy shall be made only with the concurrence of the Department of State and after consultation with the Arms Control and Disarmament Agency, the Nuclear Regulatory Commission, the Department of Commerce, and the Department of Defense.

§ 810.7 Generally authorized activities.

In accordance with section 57b(2) of the Atomic Energy Act, the Secretary of Energy has determined that the following activities are generally authorized, provided no sensitive nuclear technology is transferred:

(a) Furnishing public information as defined in § 810.3;

(b) Furnishing information or assistance to prevent or correct a current or imminent radiological emergency posing a significant danger to public health and safety, provided the Department of Energy is notified in advance and does not object;

(c) Implementing the Agreement between the United States of America and the International Atomic Energy Agency for the Application of Safeguards in the United States;

(d) Participation in exchange programs approved by the Department of State in consultation with the Department of Energy;

(e) Participation approved by a U.S. Government agency in IAEA programs, and activities of IAEA employees whose employment was approved by the U.S. Government;

(f) Participation in open meetings as defined in § 810.3 that are sponsored by educational, scientific, or technical organizations or institutions;

(g) Otherwise engaging directly or indirectly in the production of special nuclear material outside the United States in ways that (1) do not involve any of the countries listed in § 810.8(a) and (2) do not involve production reactors, enrichment, reprocessing, fabrication of nuclear fuel containing plutonium, or production of heavy water, as described in § 810.8(c) (1) through (5).

§ 810.8 Activities requiring specific authorization.

Unless generally authorized by § 810.7, a person requires specific authorization by the Secretary of Energy before:

(a) Engaging directly or indirectly in the production of special nuclear material in any of the countries listed below:

Afghanistan
Albania
Algeria
Andorra
Angola
Argentina
Bahrain
Brazil
Bulgaria
Burma
Chile
China, People's Republic of
Comoros
Cuba
Czechoslovakia
Djibouti
Estonia
German Democratic Republic (and East Berlin)
Guyana
Hungary
India
Iran
Iraq
Israel
Kampuchea
Korea, People's Democratic Republic of
Kuwait
Laos
Latvia
Libya
Lithuania
Mauritania
Monaco
Mongolian People's Democratic Republic
Mozambique
Niger
Oman
Pakistan
Poland
Qatar
Romania
Saudi Arabia
South Africa
Soviet Union
Syria
Tanzania
United Arab Emirates
Vanuatu
Vietnam
Yemen, People's Democratic Republic of
Zambia
Zimbabwe

Countries may be removed from or added to this list by amendments published in the Federal Register;

(b) Providing sensitive nuclear technology for an activity in any foreign country;

(c) Engaging in or providing assistance in any of the following activities with respect to any foreign country:

(1) Designing production reactors or facilities for the separation of isotopes of source or special nuclear material (enrichment), chemical processing of irradiated special nuclear material (reprocessing), fabrication of nuclear fuel containing plutonium, or the production of heavy water;

(2) Constructing, fabricating, operating, or maintaining such reactors or facilities;

(3) Designing, constructing, fabricating, operating or maintaining components specially designed, modified or adapted for use in such reactors or facilities;

(4) Designing, constructing, fabricating, operating or maintaining major critical components for use in such reactors or production-scale facilities; or

(5) Training in the activities of paragraphs (c) (1) to (4) of this section.

§ 810.9 Restrictions on general and specific authorization.

A general or specific authorization granted by the Secretary of Energy under these regulations:

(a) Is limited to activities involving only unclassified information and does not permit furnishing Restricted Data or other classified information.

(b) Does not relieve a person from complying with relevant laws or the regulations of other Government agencies applicable to exports;

(c) Does not authorize a person to engage in any activity when the person knows or has reason to know that the activity is intended to provide assistance in designing, developing, fabricating or testing a nuclear explosive device.

§ 810.10 Grant of specific authorization.

(a) Any person proposing to provide assistance for which §810.8 indicates specific authorization is required may apply for the authorization to the U.S. Department of Energy, Washington, DC 20585, Attention: Director, Division of Politico-Military Security Affairs, DP-332, Office of International Security Affairs.

(b) The Secretary of Energy will approve an application for specific authorization if he determines, with the concurrence of the Department of State and after consultation with the Arms Control and Disarmament Agency, the Nuclear Regulatory Commission, the Department of Commerce, and the Department of Defense, that the activity will not be inimical to the interest of the United States. In making this determination, the Secretary will take into account:

(1) Whether the United States has an agreement for nuclear cooperation with the nation or group of nations involved;

(2) Whether the country involved is a party to the NPT, or a country for which the Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco) is in force;

(3) Whether the country involved has entered into an agreement with the IAEA for the application of safeguards on all its peaceful nuclear activities;

(4) Whether the country involved, if it has not entered into such an agreement, has agreed to accept IAEA safeguards when applicable to the proposed activity;

(5) Other nonproliferation controls or conditions applicable to the proposed activity;

(6) The relative significance of the proposed activity;

(7) The availability of comparable assistance from other sources;

(8) Any other factors that may bear upon the political, economic, or security interests of the United States, including U.S. obligations under international agreements or treaties.

(c) If the proposed assistance involves the export of "sensitive nuclear technology" as defined in § 810.3, the requirements of sections 127 and 128 of the Atomic Energy Act and of any applicable U.S. international commitments must also be met.

(d) Approximately 30 days after the Secretary's grant of a specific authorization, a copy of the Secretary's determination may be provided to any person requesting it at the Department's Public Reading Room, unless the applicant submits information showing that public disclosure will cause substantial harm to its competitive position. This provision does not affect any other authority provided by law for the Department not to disclose information.

§ 810.11 Revocation, suspension, or modification of authorization.

The Secretary may revoke, suspend, or modify a general or specific authorization:

(a) For any material false statement in an application for specific authorization or in any additional information submitted in its support;

(b) For failing to provide a report or for any material false statement in a report submitted pursuant to § 810.13;

(c) If any authorized assistance is subsequently determined to be inimical to the interest of the United States or otherwise no longer meets the legal criteria for approval; or

(d) Pursuant to Section 129 of the Atomic Energy Act.

§ 810.12 Information required in an application for specific authorization.

Each application shall contain:

(a) The name, address, and citizenship of the applicant, and complete disclosure of all real parties in interest; if the applicant is a corporation or other legal entity, where it is incorporated or organized, the location of its principal office, and the degree of any control or ownership by any foreign person or entity;

(b) A complete description of the proposed activity, including its approximate monetary value, the name and location of any facility or project involved, the name and address of the person or legal entity for which the activity is to be performed, and a detailed description of any specific project to which the activity relates;

(c) Any information the applicant may wish to provide concerning the factors listed in § 810.10(b); and

(d) Designation of any information considered proprietary whose public disclosure would cause substantial harm to the competitive position of the applicant.

§ 810.13 Reports.

(a) Any person who has received a specific authorization shall within 30 days after beginning the authorized activity provide to the Department of Energy a report containing the following information:

(1) The name, address, and citizenship of the person submitting the report;

(2) The name, address, and citizenship of the person or entity for which the activity is being performed;

(3) A description of the activity, the date it began, its location, status, and anticipated date of completion; and

(4) A copy of the Department of Energy's letter authorizing the activity.

(b) Any person carrying out a specifically authorized activity shall inform DOE when the activity is completed or if it is terminated before completion.

(c) Any person granted a specific authorization shall inform DOE when it is known that the proposed activity will not be undertaken and the granted authorization will not be used.

(d) Any person, within 30 days after beginning any generally authorized activity under § 810.7(b) or (g), shall provide to the Department of Energy:

(1) The name, address, and citizenship of the person submitting the report;

(2) The name, address, and citizenship of the person or entity for which the activity is being performed; and

(3) A description of the activity, the date it began, its location, status, and anticipated date of completion.

(e) Persons engaging in generally authorized activities as employees of persons required to report are not themselves required to report.

(f) Persons engaging in activities generally authorized under § 810.7 (a), (c), (d), (e), and (f) are not subject to reporting requirements.

(g) All reports should be sent to: U.S. Department of Energy, Washington, DC 20585, Attention: Director, Division of Politico-Military Security Affairs, DP-332, Office of International Security Affairs.

§ 810.14 Additional information.

The Department of Energy may at any time require a person engaging in any generally or specifically authorized activity to submit additional information.

§ 810.15 Violations.

(a) The Atomic Energy Act provides that:

(1) Permanent or temporary injunctions or restraining orders may be granted to prevent any person from violating any provision of the Atomic Energy Act or its implementing regulations.

(2) Any person convicted of violating or conspiring or attempting to violate any provision of section 57 of the Atomic Energy Act may be fined up to $10,000 or imprisoned up to 10 years, or both. If the offense is committed with intent to injure the United States or to aid any foreign nation, the penalty could be up to life imprisonment and a $20,000 fine.

(b) Title 18 of the United States Code, section 1001, provides that persons convicted of willfully falsifying, concealing, or covering up a material fact or making false, fictitious or fraudulent statements or representations may be fined up to $10,000 or imprisoned up to five years, or both.

§ 810.16 Effective date.

These regulations are effective upon publication as a final rule. Except for actions which may be taken by DOE pursuant to § 810.11, this revision does not affect the validity or terms of any specific authorization granted under the previous regulations. Persons engaging in activities that were generally authorized under the previous regulations but are no longer generally authorized under these regulations must apply for specific authorization within 90 days but may continue their activities until their application is acted upon

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ATTACHMENT TO QUESTION 20
10 CFR 1017

Monday
April 22, 1985

Part III

Department of Energy

Office of the Secretary

10 CFR Part 1017

Identification and Protection of Unclassified Controlled Nuclear Information; Final Rule

DEPARTMENT OF ENERGY

Office of the Secretary

10 CFR Part 1017

Identification and Protection of Unclassified Controlled Nuclear Information

AGENCY: Department of Energy.

ACTION: Final rule.

SUMMARY: The Department of Energy (DOE) is issuing these regulations to prohibit the unauthorized dissemination by U.S. Government employees, contractors, subcontractors, and any other person of certain information, identified as Unclassified Controlled Nuclear Information (UCNI). This information is limited to certain unclassified but sensitive government information which concerns atomic energy defense programs. These regulations are being issued in response to requirements set forth in section 148 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2168). These regulations describe how government information is determined to be UCNI, establish minimum protection standards for UCNI, specify who may have access to UCNI, and establish procedures for the imposition of penalties for violation of these regulations.

EFFECTIVE DATE: May 22, 1985.

FOR FURTHER INFORMATION CONTACT:

Paul R. Laplante, Office of Policy and Planning (DP-6), Office of the Assistant Secretary for Defense Programs, Department of Energy, Washington, DC 20585, (202) 252-1870

Jo Ann Williams, Office of the Assistant General Counsel for International Development and Defense Programs (GC-31), Department of Energy, Washington, DC 20585, (202) 252-6975

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I. Background

The DOE is charged with the operation of programs for: (1) Research, development, testing, and production of nuclear weapons, (2) nuclear material production for defense activities, and (3) certain defense related nuclear reactors. In recent years, the Congress and the DOE have been increasingly concerned about the possibility of terrorist or other criminal acts directed against a government nuclear defense activity. This concern is based, in part, on the increased incidence of acts of terrorist-inspired violence, the increased sophistication of these acts, and the increased availability of the technological resources, including information in the public domain, necessary to commit these acts.

In response to this perceived threat, Congress directed the DOE, by enactment of section 210 of the DOE National Security and Military Applications of Nuclear Energy Authorization Act of 1982, Pub. L. 97-90, to safeguard certain types of unclassified but sensitive information from unauthorized dissemination in the interest of protecting both the health and safety of the public and the common defense and security of the Nation. Congress recognized that while much information concerning atomic energy defense programs is classified, a new statutory provision was necessary to protect certain sensitive information which could not be classified under statute or executive order. Section 210 amended the Atomic Energy Act of 1954 (42 U.S.C. 2011 *et seq.*) by adding section 148, "Prohibition Against the Dissemination of Certain Unclassified Information."

Section 148 is not without precedent: in 1980, the Congress amended the Atomic Energy Act to add section 147. Section 147 authorizes the Nuclear Regulatory Commission to prohibit unauthorized disclosure of certain unclassified safeguards information. This information must be related to control and accountability procedures and security measures for special nuclear material and related vital plant equipment used for industrial or commercial purposes, medical therapy, or certain kinds of nuclear-related research and development conducted by private or public institutions or persons. One of the major purposes of section 148 is to allow the Federal Government to control at least the same type of sensitive information about its operations as is being protected about the operations of private nuclear facilities.

Section 148 directs the Secretary to prescribe regulations, after notice and opportunity for public comment, or issue orders as may be necessary to prohibit the unauthorized dissemination of certain unclassified information concerning atomic energy defense programs. This information must pertain to the following:

1. The design of production or utilization facilities;

2. Security measures (including security plans, procedures, and equipment) for the physical protection of: (a) Production or utilization facilities, (b) nuclear material contained in such facilities, or (c) nuclear material in transit; or

3. The design, manufacture, or utilization of any nuclear weapon or component if the design, manufacture, or utilization of such weapon or component was contained in any information declassified or removed from the Restricted Data category by the Secretary (or the head of the predecessor agency of the Department of Energy) pursuant to section 142 of the Atomic Energy Act;

In order for information in the above categories to be controlled under section 148, it must be of such a sensitive nature that its unauthorized dissemination could reasonably be expected to have a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the likelihood of: (1) The illegal production of nuclear weapons, or (2) the theft, diversion, or sabotage of nuclear materials, equipment, or facilities.

UCNI only includes government information which: (1) Is not classified, (2) concerns atomic energy defense programs, (3) falls within at least one of the three categories described above, and (4) meets the adverse effect test described above. A key point in understanding these regulations is the distinction between the concepts of "information" versus "documents or material." As used in these regulations, "information" is independent of the physical medium in which it is contained. A fact that is UCNI remains UCNI whether it appears in a report, a letter, a photograph, or is spoken. The distinction between "information" and "documents or material" is of particular significance in understanding the functions and authorities of the three kinds of officials established under the regulations for the administration of the UCNI program. These officials are Controlling Officials, Reviewing Officials, and Denying Officials.

A Controlling Official (refer to § 1017.7(a)(1)) has the authority to decide what "information" is UCNI. This authority is the most significant of the authorities. Therefore, use of this authority will be tightly controlled by: (1) Limiting the number of officials granted such authority, (2) requiring that each decision made by a Controlling Official be reported to a central office for oversight purposes, and (3) including each such decision, with its justification, in a quarterly report available to any interested person upon request. Guidelines on what information is UCNI based on the collective decisions of Controlling Officials will be issued.

A Reviewing Official (refer to § 1017.12(a)) has less authority than a Controlling Official. Applying the guidelines described above, a Reviewing Official may determine whether "documents or material" contain "information" that is UCNI. The authority of a Reviewing Official is limited to applying instructions contained in the guidelines. A Reviewing Official cannot determine that "information" is UCNI. A Reviewing Official's authority is also limited with respect to the denial of requests for documents made by the public. If a person requests a document under statute or executive order (e.g., the Freedom of Information Act), a Reviewing Official may not deny the release of all or part of the document because, in the Reviewing Official's sole opinion, the document contains UCNI. The Reviewing Official must refer the requested document, with his or her recommendation, to another official, a Denying Official.

The role of a Denying Official (refer to § 1017.12(b)) is to verify that the Reviewing Official has done his or her job correctly. This added check insures that the public will not be denied access to documents, material, or information that it has a right to have.

In conclusion, this system of three different kinds of officials insures that section 148 of the Atomic Energy Act will be implemented in an efficient manner while minimizing the potential for abuse by providing several mechanisms for control and oversight of the UCNI program.

Examples of UCNI are included in the Appendix. The Appendix is not part of the regulations and will not be codified by publication in the Code of Federal Regulations. Its purpose was to provide examples of UCNI to assist commenters in understanding the regulations.

II. Rulemaking Requirements

A. National Environmental Policy Act

The National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), requires Federal agencies to prepare detailed statements on major Federal actions significantly affecting the quality of the human environment. The DOE has determined that the regulations do not significantly affect the quality of the human environment; therefore, the preparation of an Environmental Impact Statement is not required.

B. Executive Order No. 12291

It has been determined that these regulations are not a major rule subject to the requirements of Executive Order No. 12291 (46 FR 13193, February 19, 1981). This determination is based on the fact that the regulations are not likely: (1) To result in an annual effect on the economy of $100 million or more; (2) to result in a major increase in costs or prices for consumers, individual industries, Federal, State, or local Government agencies, or geographic regions; or (3) to cause a significant adverse effect on competition, employment, investment, productivity, innovation, or the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

These regulations were submitted to the Director of the Office of Management and Budget for a 10 day review period as required by section 3(c)(3) of Executive Order 12291. The Director has concluded his review under that Executive Order.

C. Regulatory Flexibility Act

Pursuant to section 605(b) of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), the DOE certifies that sections 603 and 604 of the Act do not apply to these regulations. This certification is based on the fact that these regulations will not have a significant economic impact on a substantial number of small entities since they merely describe how government information is to be identified and protected under section 148 of the Atomic Energy Act.

D. Paperwork Reduction Act

These regulations do not impose a collection of information requirement; therefore, it is not necessary to submit them to the Office of Management and Budget for review under the Paperwork Reduction Act (44 U.S.C. 3501 through 3520).

III. Freedom of Information Act (FOIA) Considerations

Paragraph a(1) of section 148 of the Atomic Energy Act provides that the DOE's exercise of the authorities in section 148 are ". . . subject to section 552(b)(3) of Title 5, United States Code . . ." (i.e., the FOIA). The DOE has determined that section 148 falls within the scope of exemption 3 of the FOIA (5 U.S.C. 552(b)(3)). Exemption 3 grants an exemption to the public disclosure provision of the FOIA for information specifically exempted from disclosure by statute. Thus, UCNI is not subject to disclosure under the FOIA. Requests for documents or material made under the FOIA shall be processed in accordance with applicable DOE regulations and orders which implement the FOIA within the Department. The DOE had determined that appeals of denials of requests for documents containing UCNI shall be decided by the Assistant Secretary for Defense Programs as is the case for appeals involving classified information. Accordingly, 10 CFR 1004.8 was revised (47 FR 44112) to reflect this determination.

IV. Analysis of Public Comments

A notice of proposed rulemaking was first published on pages 13988–13993 of the Federal Register of April 1, 1983. The comment period ended on October 7, 1983. Public hearings were held in Washington, D.C. on August 16, 1983; Denver, Colorado on August 18, 1983; and Chicago, Illinois on September 28, 1983. Written comments were received from 124 sources and oral comments were received from 32 sources. These sources included private citizens, representatives of Congress, state governments, labor unions, special interest organizations, universities and colleges, and other Federal agencies. Based on the review and analysis of the written and oral comments received in response to the first proposed rulemaking, a second proposed rulemaking was published on pages 31236–31248 of the Federal Register of August 3, 1984. Copies of this second proposed rulemaking were sent to all persons and groups (for whom the DOE had addresses) who commented on the first proposed rulemaking. This comment period ended on October 28, 1984. A fourth public hearing was held in Washington, D.C. on September 13, 1984. Written comments were received from 137 sources and oral comments were received from 6 sources. These sources were a cross-section of persons and groups similar to those who commented on the first proposed rulemaking in 1983. The following summarizes the major comments, suggestions, and actions taken.

A. Nuclear Weapons Shipments

The overwhelming majority (118 of a total of 143) of comments was based on a concern that the regulations would make it illegal to monitor or protest the movements of the special trains which transport nuclear weapons, their components, or special nuclear material to various sites around the country. These trains, commonly referred to as the "white trains," have been the objects of organized protests. The protestors observe the route of a train and communicate this information to others. This allows the protesters to organize demonstrations along the route of the train. The commenters were concerned that their rights to protest and communicate observations about the movements of the "white trains" would be infringed upon by these regulations.

These regulations were not intended to interfere with the rights of private citizens to protest or to restrict the communication of any information which persons acquire by their own or another person's observation. Such privately generated information is not government information as defined in § 1017.3(j) and is, therefore, exempt from control under § 1017.6(a)(1). Only certain official documents which contain government information about these trains may be controlled under the regulations. Unauthorized dissemination of any such official documents or the UCNI which they contain by government employees or others having official access to them would be a violation of the regulations.

B. Definition of "Atomic Energy Defense Programs"

One comment expressed the position that the definition for "atomic energy defense programs" (refer to § 1017.3(b)) is too broad. The comment stated that only those activities conducted under the Assistant Secretary for Defense Programs and funded in the DOE's Atomic Energy Defense Activities Budget should be included within the scope of the regulations. Specifically, this comment stated that the naval nuclear reactor program should not be included within the scope of the regulations. However, defense related reactor designs for naval propulsion purposes are specifically cited in the legislative history of section 148 (Congressional Record, November 3, 1981, p. S.12766) as an example of the type of information that should be protected under section 148. In addition, a naval propulsion reactor meets the definition of a utilization facility in section 11cc of the Atomic Energy Act. Therefore, its design is within the scope of section 148a(1)(A) of the Atomic Energy Act and these regulations. The functional definition in § 1017.3(b) is preferable to the alternative recommended in the comment (i.e., that the definition be based on arbitrary budget or organizational categories) in that it protects all defense-related, sensitive information within the intended scope of the regulations.

One comment objected to the term "other Government agencies" in the definition of "Atomic Energy Defense Programs." Under section 148 of the Atomic Energy Act, DOE has sole responsibility within the Executive Branch for establishing basic standards for the identification and protection of UCNI. (This parallels DOE's authority under other sections of the Act for restricted Data.) DOE's exclusive authority prevents anomalous treatment of identical or similar information merely because different agencies possess it or it relates to the facilities of different agencies. For example, security measures concerning the storage of nuclear weapons is equally sensitive whether the storage location belongs to the DOE or the Department of Defense. Therefore, the inclusion of "other Government agencies" in the definition of "Atomic Energy Defense Programs" should remain.

C. Definition of "Component"

One comment stated that § 1017.3(d) defines "component" of a nuclear weapon in such a way that it could include the delivery system or vehicle (e.g., aircraft, submarine) for the nuclear weapon. This interpretation of the definition is incorrect. The definition of "component" only includes those elements of a nuclear weapon which are part of the weapon. Delivery systems or vehicles for nuclear weapons are not within the definition of "component" in the regulations.

D. Exemptions

Fourteen comments expressed various concerns about the exemptions in § 1017.6. These exemptions identify subject areas that are exempt from the regulations and, therefore, cannot be UCNI. Some comments expressed the concern that all information not specifically exempt from these regulations must be covered by them. This interpretation is incorrect. The purpose of the exemptions is to assist in indicating the intended scope of the regulations and is not intended to be all inclusive. Information not specifically exempt from the regulations must still satisfy all of the limitations, procedures, tests, and protections specified throughout the regulations before it can be controlled as UCNI.

Where ever possible, a universal exemption was used. However, in certain cases, this was not possible. Some commenters expressed the concern that certain limited information that affects the public's health and safety may still be UCNI. Section 148a(2) of the Atomic Energy Act states that information should be controlled as UCNI if ". . . the unauthorized dissemination of such information could reasonably be expected to have a significant adverse effect on the health and safety of the public . . ." Therefore, it would be inconsistent with the intent of Congress to provide a universal exemption for all information related to the public's health and safety. While the use of partial exemptions does not satisfy the desires of certain commenters to have full exemptions, the DOE believes these partial exemptions serve a positive purpose of signifying the DOE's intent to subject these partially exempted information categories to particular scrutiny.

E. Definition of "Scientific Information"

One comment recommended that we define the term "basic scientific information" used in § 1017.6(a)(4) and the term "applied scientific information" used in § 1017.6(a)(5). Since these terms are each only used once in the regulations, their meaning, as used in these regulations, is parenthetically incorporated where the terms appear in the regulations.

F. Appointment of Officials

One comment expresed the concern that too many Controlling Officials and Reviewing Officials may be appointed, resulting in abuse of the authorities contained in section 148 of the Atomic Energy Act. A DOE directive will implement these regulations within the Department. The directive will specify, in detail, the procedures by which the various officials are to be designated. Administrative measures, including education and appraisal programs, will be used to assure that abuses are controlled. Finally, the violations section, § 1017.18, applies to Controlling Officials and Reviewing Officials who abuse their authority.

G. Designed-Related Operational Information

Section 148a(1)(A) of the Atomic Energy Act specifies that information pertaining to the design of production facilities or utilization facilities may be UCNI. One comment states that § 1017.8(c)(2) broadens this category to include design-related operational information about such facilities. This section of the regulations does not broaden the statutory intent but only acknowledges that certain operational information can reveal design information. Not all operational information can be UCNI under this section. A link between the operational information and sensitive design information must exist in order for the operational information to be designated as UCNI.

H. Adverse Effect Test Factors

Three comments stated that the "Other Factors" specified in § 1017.9(b) enlarged the scope of information that could be UCNI. We disagree. The adverse effect test itself is contained in § 1017.9(a), which closely tracks the language in section 148a(2) of the Atomic Energy Act. Each factor in § 1017.9(b) has a basis in the language of § 1017.9(a). The purpose of § 1017.9(b) is not to expand on the scope of the regulations; rather, § 1017.9(b) clarifies and limits the more general language in § 1017.9(a) by using more specific language and a number of illustrative examples. While any such list of examples cannot be all inclusive, it does clarify the thrust and intent of the regulations and should remain in the regulations. One comment recommended that the relationship of the factors in § 1017.9(b) to the adverse effect test determination in § 1017.9(a) be clarified. The first sentence in § 1017.9(b) has been modified to accomplish this clarification.

I. Nuclear Material Determinations

Four comments objected to allowing the Secretary to determine that a material, in addition to special nuclear material, source material, or byproduct material as defined in the Atomic Energy Act, is a nuclear material. The definition of "nuclear material" (§ 1017.3(m)) limits the scope of possible additions to the list of nuclear materials to materials "... used in the production, testing, utilization, or assembly of atomic weapons or components of atomic weapons ..." Section 1017.10(a) requires that each addition to the list of nuclear materials pass an adverse effect test prior to its being designated a nuclear material under these provisions. Materials which are only used in civilian programs (*i.e.*, not atomic energy defense programs) are exempt from these regulations under § 1017.3(m). Harmless materials cannot pass the adverse effect test and cannot be added to the definition of nuclear material. Note that § 1017.10(b) was added to clarify that designation of a material as a nuclear material does not automatically make all information about the material UCNI. Specific information about the material must still meet all the requirements in the regulations before it can be made UCNI.

One comment suggested that we use a definition found in DOE Order 5630.2, "Control and Accountability of Nuclear Material, Basic Principles." A list of materials determined to be nuclear materials under these UCNI regulations will be part of implementing agency documents. While we anticipate that this list will be similar to the list of materials in the DOE order recommended in the comment, we are not certain that it will be identical and prefer a separate listing in any case.

J. Quarterly Report Distribution.

One comment recommended that the quarterly report specified in § 1017.11 be distributed to all Federal Depository Libraries. Any means of distribution of the quarterly report, other than that described in § 1017.11, will be determined by the level of interest in the report. If we receive a sufficient number of requests for the quarterly report, we will explore efficient distribution alternatives, including utilization of the referral to Federal Depository Libraries.

K. State Officials' Access to Unclassified Controlled Nuclear Information

One comment from a state government representative was that state officials would not be eligible for access to UCNI concerning environmental matters in their state. However, §1017.16(a)(2)(ii)(F) allows state officials to have routine access to UCNI, once they have met the conditions in § 1017.16(a).

L. Labor Unions

Representatives from two labor unions and one other comment expressed concern that persons affiliated with a union representing DOE or DOE contractor employees would not have access to UCNI needed in a grievance procedure or other, similar situations. They requested that union representatives be added to the list of persons in § 1017.16(a)(2)(ii) who are eligible for routine access to UCNI. However, routine access to UCNI, as described in §1017.16(a), is intended to provide persons access to UCNI in the performance of official duties. Union representatives' probable uses for UCNI are not in direct support of the performance of official duties for the DOE or its contractors. In addition, a person granted routine access to UCNI under § 1017.16(a) may further disseminate the UCNI. This authority to further disseminate UCNI is more authority than is needed by union representatives.

Union representatives, under § 1017.16(b), may be granted special access to UCNI, a form of limited access designed for persons who cannot be granted routine access to UCNI under § 1017.16(a). Depending on the specific circumstances in a particular case, we anticipate that most purposes for which a union representative (including but not limited to a scientist, engineer, attorney, or medical doctor assisting the union) is likely to request access to UCNI would support a positive decision to provide special access to the UCNI under § 1017.16(b)(3)(ii). The final decision to grant special access to the UCNI would be based on the evaluation of this purpose in conjunction with the other factors in § 1017.16(b)(3).

M. Freedom of Information Requests Time Limits

Two comments recommended that the regulations specify a time limit for response to requests for documents made under the FOIA. Such time limits are specified in DOE regulations and orders which implement the FOIA. These time limits apply to requests for documents which contain UCNI. Therefore, it is unnecessary to repeat these time limits in these regulations and could be confusing if the requester believes time limits independent of normal FOIA procedures are intended.

N. Appeal Rights

Two comments requested that a formal appeal process be established by which any person could appeal whether or not specified information is UCNI. An appeal process exists as part of the DOE's implementation of the FOIA (See 10 CFR Part 1004). This process allows a person to appeal the denial of documents for any reason under the FOIA, including denials of UCNI.

O. Implementing Documents

One comment recommended that we explain the relationship between the regulations and other, additional documents which will implement the regulations. In so doing, persons would better understand the interrelationships between the regulations and these documents and why the regulations are structured as they are. The regulations have the force of law and apply to those persons specified in § 1017.2. The regulations state general policy and those specific procedures that directly impact members of the public. Therefore, different parts of the regulations are written at different levels of detail. For example, §§ 1017.16 (concerning access to UCNI) and 1017.18 (concerning the imposition of violations) are relatively detailed because they define procedures which, in certain circumstances, could apply to members of the general public. However, other parts of the regulations, such as §§ 1017.7(a)(2) and 1017.12(c) (concerning the appointment of officials), address internal agency procedures which do not directly affect the public and are written at a less detailed level.

Upon issuance, the regulations will be implemented by detailed, internal agency documents which will establish agency procedures in all areas addressed in the regulations. Specifically, these regulations will be implemented by means of (1) a directive (or directives) which will apply only to DOE employees (and to its contractors) and (2) guidelines (see §§ 1017.7(c)(2), 1017.12(a)(1), and 1017.12(b)) which will contain detailed, specific instructions as to what is or is not UCNI. These internal, implementing documents must be consistent in every respect with the regulations but will be more detailed in many respects than the regulations. Therefore, while the regulations are general in certain areas dealing with internal agency procedures, these areas will be addressed in detail in the regulations' implementing documents.

List of Subjects in 10 CFR Part 1017

Administrative practice and procedure, Freedom of information, Government contracts, Security measures, Nuclear energy, Penalties.

(Sec. 210, Pub. L. No. 97–90, 95 Stat. 1160 (42 U.S.C. 2168) as amended by Sec. 17, Pub. L. No. 97–415, January 4, 1983)

For the reasons set out in the preamble, Part 1017 of Chapter X of Title 10 of the Code of Federal Regulations is added as set forth below.

Issued in Washington, D.C. on April 12, 1985.

John S. Herrington,
Secretary of Energy.

V. Text of Regulation

Part 1017 is added to 10 CFR Chapter X to read as follows:

PART 1017—IDENTIFICATION AND PROTECTION OF UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION

Sec.

1017.1 Purpose and scope.
1017.2 Applicability.
1017.3 Definitions.
1017.4 Policy.
1017.5 Prohibitions.
1017.6 Exemptions.
1017.7 Identification of Unclassified Controlled Nuclear Information.
1017.8 Categories of Unclassified Controlled Nuclear Information.
1017.9 Adverse effect test.
1017.10 Nuclear material determinations.
1017.11 Quarterly report.
1017.12 Review and denial of documents or material.
1017.13 Retirement of documents or material.
1017.14 Joint information, documents, or material.
1017.15 Markings on documents or material.
1017.16 Access to Unclassified Controlled Nuclear Information.
1017.17 Physical protection requirements.
1017.18 Violations.

Authority: Sec. 210, Pub. L. 97–90, 95 Stat. 1160 (42 U.S.C. 2168) as amended by Sec. 17, Pub. L. 97–415, January 4, 1983.

§ 1017.1 Purpose and scope.

(a) This part contains regulations of the Department of Energy (DOE) implementing section 148 (42 U.S.C. 2168) of the Atomic Energy Act which prohibits the unauthorized dissemination of certain unclassified government information. This information, identified by the term "Unclassified Controlled Nuclear Information" (UCNI), is limited to information concerning atomic energy defense programs.

(b) These regulations—

(1) Provide for the review of information prior to its designation as UCNI;

(2) Describe how information is determined to be UCNI;

(3) Establish minimum physical protection standards for documents and material containing UCNI;

(4) Specify who may have access to UCNI; and

(5) Establish a procedure for the imposition of penalties on persons who violate section 148 of the Atomic Energy Act or any regulation or order of the Secretary issued under section 148 of the Atomic Energy Act, including these regulations.

§ 1017.2 Applicability.

These regulations apply to—

(a) Any person authorized access to UCNI;

(b) Any person not authorized access to UCNI who acquires, attempts to acquire, or conspires to acquire, in violation of these regulations, Government information in any document or material containing an UCNI notice (refer to § 1017.15); and

(c) Any person not authorized access to UCNI but who wants to be authorized access to UCNI.

§ 1017.3 Definitions.

As used in this part—

(a) "Atomic Energy Act" means the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*).

(b) "Atomic Energy Defense Programs" means activities, equipment, and facilities of the DOE or other Government agencies utilized or engaged in support of the—

(1) Development, production, testing, sampling, maintenance, repair, modification, assembly, utilization, transportation, or retirement of nuclear weapons or components of nuclear weapons;

(2) Production, utilization, or transportation of nuclear material for military applications; or

(3) Safeguarding of activities, equipment, or facilities which support the functions in paragraphs (b)(1) and (b)(2) of this section, including the protection of nuclear weapons, components of nuclear weapons, or nuclear material for military applications at a fixed facility or in transit.

(c) "Authorized Individual" means a person who has been granted routine access to UCNI under § 1017.16(a).

(d) "Component" means any operational, experimental, or research-related part, subsection, design, or material used in the manufacture or utilization of a nuclear weapon, nuclear explosive device, or nuclear weapon test assembly.

(e) "Controlling Official" means an individual authorized under § 1017.7(a) to make a determination that specific Government information is, is not, or is no longer UCNI, such determination serving as the basis for determinations by a Reviewing Official that a document or material contains, does not contain, or no longer contains UCNI.

(f) "Denying Official" means an individual authorized under § 1017.12(b) to deny a request made under statute or Executive order for all or any portion of a document or material containing UCNI.

(g) "Document or Material" means the physical medium on or in which information is recorded, or a product or substance which contains or reveals information, regardless of its physical form or characteristics.

(h) "Formerly Restricted Data" means a category of information classified under section 142 d. of the Atomic Energy Act.

(i) "Government" means the Executive Branch of the United States Government.

(j) "Government Information" means any fact or concept, regardless of its physical form or characteristics, that is owned by, produced by or for, or otherwise controlled by the United States Government.

(k) "In Transit" means the physical movement of a nuclear weapon, a component of a nuclear weapon, or nuclear material from one part to another part of a facility or from one facility to another facility. An item is considered "in transit" until it has been relinquished to the custody of the authorized recipient at its ultimate destination. An item in temporary storage pending shipment to its ultimate destination is "in transit."

(l) "National Security Information" means a category of information classified under Executive Order 12356, "National Security Information," or its successor executive orders.

(m) "Nuclear Material" means special nuclear material, byproduct material, or source material as defined by sections 11 aa., 11e., and 11z., respectively, of the Atomic Energy Act, or any other material used in the production, testing, utilization, or assembly of nuclear weapons or components of nuclear weapons that the Secretary determines to be nuclear material under § 1017.10(a).

(n) "Nuclear Weapon" means atomic weapon.

(o) "Physical Security" means the combination of operational and security equipment, personnel, and procedures used to protect facilities, information, documents, or material against theft, sabotage, diversion, or other criminal acts.

(p) "Restricted Data" means a category of information classified under section 142 of the Atomic Energy Act.

(q) "Reviewing Official" means an individual authorized under § 1017.12(a) to make a determination, based on guidelines which reflect decisions of Controlling Officials, that a document or material contains UCNI.

(r) "Safeguards" means an integrated system of physical protection, personnel reliability, accountability, and material control measures designed to deter, prevent, detect, and respond to unauthorized access, diversion, or possession of a nuclear weapon, a component of a nuclear weapon or nuclear material.

(s) "Secretary" means the Secretary of Energy.

(t) "Unauthorized Dissemination" means the intentional or negligent transfer, in any manner, by any person, of information contained in a document or material determined by a Reviewing Official to contain UCNI and marked in accordance with § 1017.15 to any person other than an Authorized Individual or a person granted special access to UCNI under § 1017.16(b).

(u) "Unclassified Controlled Nuclear Information" means certain unclassified government information prohibited from unauthorized dissemination under section 148 of the Atomic Energy Act—

(1) Which concerns atomic energy defense programs;

(2) Which pertains to—

(i) The design of production facilities or utilization facilities;

(ii) Security measures (including security plans, procedures, and equipment) for the physical protection of—

(A) Production or utilization facilities;

(B) Nuclear material contained in such facilities; or

(C) Nuclear material in transit; or

(iii) The design, manufacture, or utilization of any nuclear weapon or component if the design, manufacture, or utilization of such weapon or component was contained in any information declassified or removed from the Restricted Data category by the Assistant Secretary for Defense Programs (or the head of the predecessor agency of the Department of Energy) pursuant to section 142 of the Atomic Energy Act; and

(3) Whose unauthorized dissemination, as determined by a Controlling Official, could reasonably be expected to have a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the likelihood of—

(i) Illegal production of nuclear weapons; or

(ii) Theft, diversion, or sabotage of nuclear materials, equipment, or facilities.

§ 1017.4 Policy.

It is the policy of the DOE to make information publicly available to the fullest extent possible. These regulations shall be interpreted and implemented so as to apply the minimum restrictions needed to protect the health and safety of the public or the common defense and security, consistent with the requirement in section 148 of the Atomic Energy Act to prohibit the unauthorized dissemination of UCNI. For example—

(a) Although UCNI is not subject to disclosure under the Freedom of Information Act (FOIA), documents or material containing both UCNI and other information which is not UCNI shall have the portions of the document or material not containing UCNI released to the maximum possible extent in response to a request made under the FOIA, subject to other exemptions of the FOIA; and

(b) To the fullest extent possible, the fundamental DOE policy of full disclosure of documents prepared under the National Environmental Policy Act (NEPA) and its implementing regulations will be followed. In some cases, this will mean that UCNI may be excised from documents to be made publicly available and prepared as an appendix, or otherwise segregated so as to allow the release of the nonsensitive portions of a document.

§ 1017.5 Prohibitions.

Government information shall not be controlled as UCNI in order to—

(a) Conceal violations of law, inefficiency, or administrative error;

(b) Prevent embarrassment to a person or organization;

(c) Restrain competition; or

(d) Prevent or delay the release of any information that does not properly qualify as UCNI.

§ 1017.6 Exemptions.

(a) Information exempt from these regulations includes—

(1) Information that is not government information;

(2) Information that concerns activities, facilities, or equipment outside the scope of atomic energy defense programs;

(3) Information that is classified as Restricted Data, Formerly Restricted Data, or National Security Information, or that is protected from disclosure under section 147 of the Atomic Energy Act (42 U.S.C. 2167);

(4) Basic scientific information (i.e., information resulting from research directed toward increasing fundamental scientific knowledge or understanding rather than any practical application of that knowledge);

(5) Applied scientific information (i.e., information resulting from research whose objective is to gain knowledge or understanding necessary for determining the means by which a specific need may be met) but not including that pertaining to:

(i) The design of production facilities or utilization facilities;

(ii) Security measures (including security plans, procedures, and equipment) for the physical protection of:

(A) Production or utilization facilities,

(B) Nuclear material contained in such facilities, or

(C) Nuclear material in transit; or

(iii) The design, manufacture, or utilization of any nuclear weapon or component if the design, manufacture, or utilization of such weapon or component was contained in any information declassified or removed from the Restricted Data category by the Secretary (or the head of the predecessor agency of the Department of Energy) pursuant to section 142 of the Atomic Energy Act;

(6) Safety information used to protect employees from occupational hazards, except for government information that reveals an exploitable vulnerability or design element that is UCNI;

(7) Radiation exposure data and all other personal health information;

(8) Information pertaining to the public health and safety and to the protection of the environment, except for government information that reveals an exploitable vulnerability or design element that is UCNI;

(9) Information concerning the transportation of low level or commercially generated radioactive waste; and

(10) Waste Isolation Pilot Plant (WIPP) information, except for government information that deals with safeguards or physical security for the WIPP project.

(b) Documents exempt from these regulations include—

(1) Documents prepared under Council on Environmental Quality regulations or DOE guidelines complying with the National Environmental Policy Act, except those portions of a document revealing an exploitable vulnerability or design element that is UCNI;

(2) Documents or material that a Reviewing Official determines to have been widely disseminated in the public domain (e.g., to a public library or a university library); and

(3) For documents which contain UCNI, any reasonably segregable portions of documents which do not contain UCNI or which contain information otherwise exempt from disclosure.

§ 1017.7 Identification of Unclassified Controlled Nuclear Information.

(a) *Authorities*—(1) *Controlling Officials*. A Controlling Official having cognizance over certain government information is authorized to make a determination that the government information is or is not UCNI. A Controlling Official with overall cognizance over UCNI under consideration for decontrol is authorized to make a determination that the information is no longer UCNI. Each Controlling Official having cognizance over UCNI under consideration for decontrol shall concur in the determination to decontrol the UCNI prior to the UCNI being decontrolled.

(2) *Designation*. The Secretary may designate the Deputy Secretary, the Under Secretary, a Secretarial Officer of the DOE, or a Manager of a DOE Operations Office to be a Controlling Official for government information within his or her cognizance. The Controlling Official may redelegate his or her authority in accordance with the redelegation provisions in the designation of authority from the Secretary.

(3) Controlling Officials shall exercise their authorities in strict compliance with the rules, prohibitions, and exemptions described in these regulations.

(b) *Criteria*. Prior to a specific type of information being identified and controlled as UCNI, a Controlling Official shall insure that the information under review meets each of the following criteria:

(1) The information is government information.

(2) The information is limited to information concerning atomic energy defense programs.

(3) The information is within the scope of at least one of the three categories of UCNI in § 1017.8.

(4) Unauthorized dissemination of the information under review meets the adverse effect test in § 1017.9.

(5) The information is the minimum amount of information necessary to be controlled to protect the health and safety of the public or the common defense and security.

(6) The purpose for controlling the information is not prohibited under § 1017.5.

(7) The information is not exempt from these regulations under § 1017.6.

(c) *Procedures*. A Controlling Official shall report each determination to control or decontrol UCNI to the Assistant Secretary for Defense Programs for—

(1) Inclusion in the quarterly report required in § 1017.11; and

(2) Incorporation into guidelines which Reviewing Officials consult in their review of documents and material for UCNI.

§ 1017.8 Categories of Unclassified Controlled Nuclear Information.

In order for information to be considered for control as UCNI, it must be within the scope of at least one of the following categories and it must meet each of the other criteria in § 1017.7(b).

(a) *Category A—Unclassified Controlled Production or Utilization Facility Design Information*. This category includes certain unclassified government information concerning—

(1) The design of production or utilization facilities which are related to atomic energy defense programs; or

(2) Design-related operational information concerning the production, processing, or utilization of nuclear material for atomic energy defense programs.

(b) *Category B—Unclassified Controlled Safeguards and Security Information*. This category includes certain unclassified government information concerning security measures for the protection of—

(1) Production or utilization facilities related to atomic energy defense programs;

(2) Nuclear material to be used for military applications, regardless of its physical state or form, contained in these facilities; or

(3) Nuclear material to be used for military applications, regardless of its physical state or form, that is in transit.

(c) *Category C—Declassified Controlled Nuclear Weapon Information*. This category includes certain declassified government information concerning the design, manufacture, or utilization of nuclear weapons or components of nuclear weapons that was once classified as Restricted Data but which has been declassified or removed from the Restricted Data Category by the Assistant Secretary for Defense Programs (or the head of predecessor agencies of the Department of Energy) under section 142 of the Atomic Energy Act.

§ 1017.9 Adverse effect test.

(a) *Determination*. In order for a Controlling Official to control government information as UCNI, the Controlling Official shall make a determination that the unauthorized dissemination of the government information under review could reasonably be expected to result in a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the likelihood of—

(1) Illegal production of a nuclear weapon; or

(2) Theft, diversion, or sabotage of nuclear material, equipment, or facilities.

(b) *Other factors*. In making a determination under § 1017.9(a), a Controlling Official may consider how the dissemination of government information under review for control as UCNI could assist a potential criminal in—

(1) Selecting a target for an act of theft, diversion, or sabotage of nuclear material, equipment, or facilities (e.g., relative importance of a facility; location, form, and quantity of nuclear material);

(2) Planning and committing an act of theft, diversion, or sabotage of nuclear material, equipment, or facilities (e.g., design of operational and security systems; building plans; methods and procedures for transfer, accountability, and handling of nuclear material; security plans, procedures, and capabilities);

(3) Measuring the success of an act of theft, diversion or sabotage of nuclear material, equipment, or facilities (e.g., actual or hypothetical consequences of the sabotage of specific vital equipment or facilities);

(4) Illegally fabricating, acquiring, or detonating a nuclear explosive device (e.g., unclassified nuclear weapon design information useful in designing a primitive nuclear device; location of unique nuclear materials needed to fabricate such a device; location of a nuclear weapon); or

(5) Dispersing hazardous nuclear material which could be used as an environmental contaminant (e.g., location, form, and quantity of nuclear material).

§ 1017.10 Nuclear material determinations.

(a) The Secretary may determine that a material other than special nuclear material, byproduct material, or source material as defined by the Atomic Energy Act is included within the scope of the term "nuclear material" if—

(1) The material is used in the production, testing, utilization; or assembly of atomic weapons or components of atomic weapons; and

(2) Unauthorized acquisition of the material could reasonably be expected to result in a significant adverse effect on the health and safety of the public or the common defense and security because the specific material—

(i) Could be used as a hazardous environmental contaminant; or

(ii) Could be of significant assistance in the illegal production of a nuclear weapon.

(b) Designation of a material as a nuclear material under paragraph (a) of this section does not make all information about the material UCNI. Specific information about the material must still meet each of the criteria in § 1017.7(b) prior to its being identified and controlled as UCNI.

§ 1017.11 Quarterly report.

The Assistant Secretary for Defense Programs shall prepare a report on a quarterly basis, to be made available upon request to any interested person, detailing the application during the previous quarter of each regulation or order prescribed or issued under section 148 of the Atomic Energy Act, including these regulations. Requests for this report may be sent to the Assistant Secretary for Defense Programs (refer to § 1017.16(b)(1) for the address).

This report must—

(a) Identify types of government information determined to be UCNI by any Controlling Official during the previous quarter;

(b) Include a justification specifying why the government information is UCNI; and

(c) Include a justification that these regulations have been applied so as to protect from disclosure only the minimum amount of government information necessary to protect the health and safety of the public or the common defense and security.

§ 1017.12 Review and denial of documents or material.

(a) *Reviewing Officials*. A Reviewing Official with cognizance over the information contained in a document or material is authorized to—

(1) Make a determination, based on guidelines which reflect decisions of Controlling Officials, that the document or material contains, does not contain, or no longer contains UCNI; and

(2) Apply or remove UCNI markings to or from the document or material.

(b) *Denying Officials*. A Denying Official with cognizance over the information contained in a document or material is authorized to deny a request made under a statute or Executive order for all or any portion of the document or material that contains UCNI. The Denying Official bases his or her denial on guidelines which reflect decisions of Controlling Officials. The Denying Official insures that the Reviewing Official who determined that the document or material contains UCNI correctly applied and interpreted the guidelines.

(c) *Designation*. Reviewing and Denying Officials are designated in accordance with Departmental directives issued by the Secretary.

§ 1017.13 Retirement of documents or material.

(a) *Unmarked documents or material*. Any document or material which is not marked as containing UCNI but which contains government information within the scope of the categories in § 1017.8 shall be marked with the notice in § 1017.15(a)(2) upon retirement to a repository (e.g., an agency's centralized records storage area, a Federal Records Center, the National Archives of the United States). The Secretary may approve alternative procedures to those described in this paragraph.

(b) *Marked documents or material*. A document or material containing an UCNI notice (refer to § 1017.15) is not required to be reviewed by a Reviewing Official upon or subsequent to retirement, except that a Reviewing Official shall review any retired document or material upon request for its release into the public domain.

(c) *Existing documents or material*. Any document or material retired to a repository prior to the effective date of these regulations need not be reviewed for UCNI. However, any such document or material that is subsequently determined by a Reviewing Official to contain UCNI must be marked and protected by the repository in accordance with these regulations, upon notification from the Reviewing Official to the repository having the document or material.

§ 1017.14 Joint information, documents, or material.

(a) *Joint Information*. A Controlling Official shall coordinate with any other Government agency or DOE organization having cognizance over the information under consideration for control or decontrol prior to making the determination that the information is or is no longer UCNI.

(b) *Joint documents or material*. A Reviewing Official or a Denying Official reviewing a document or material for decontrol and public release shall coordinate this review with the DOE organization or Government agency originating the document or material and with each DOE organization or Government agency having cognizance over any information contained in the document or material.

(c) *Resolution of disagreements*. Since the DOE has overall cognizance over all UCNI and sole responsibility for implementation of section 148 of the Atomic Energy Act, the Secretary has the final authority to resolve all disagreements concerning—

(1) The identification of UCNI that is within the cognizance of more than one DOE organization or of a Government agency in addition to the DOE; or

(2) The control or decontrol or all or any part of any document or material

originated by or for the DOE or another Government agency that contains UCNI.

(d) *Notification of determinations.* An official making a determination concerning joint information, documents, or material shall inform affected organizations within the DOE or in other Government agencies of his or her determination.

(e) *Other government information control systems.* A document containing information within the scope of section 148 of the Atomic Energy Act may also contain information within the scope of other government information control systems. Where this is the case, the requirements of the more restrictive system apply.

§ 1017.15 Markings on documents or material.

(a) *Documents or material which may contain UCNI.* (1) Any person who originates or has in his or her possession a document or material that the person believes may contain UCNI, may mark in a conspicuous manner the document or material with the notice in the paragraph (a)(2) of this section prior to transmitting the document or material to a Reviewing Official for a formal determination.

(2) Any Authorized Individual who originates or has in his or her possession a document or material that the Authorized Individual believes may contain UCNI, shall mark in a conspicuous manner the document or material with the following notice—

(i) Prior to transmitting the document or material outside of the Authorized Individual's organization;

(ii) Prior to transmitting the document or material to a Reviewing Official; or

(iii) Upon the retirement of the document or material under § 1017.13:

Not for Public Dissemination

May contain Unclassified Controlled Nuclear Information subject to section 148 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2168). Approval by the Department of Energy prior to release is required.

(b) *Documents or material which contain UCNI.* A Reviewing Official shall mark in a conspicuous manner each document or material that the Reviewing Official determines to contain UCNI with one of the following notices:

(1) Unclassified Controlled Nuclear Information Not for Public Dissemination

Unauthorized dissemination subject to civil and criminal sanctions under section 148 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2168).

(2) Not for Public Dissemination

Unauthorized dissemination subject to civil and criminal sanctions under 42 U.S.C. 2168.

(c) *Other markings.* UCNI markings may be applied regardless of any other distribution control markings (e.g., "Official Use Only," company proprietary) that are also on a document or material.

§ 1017.16 Access to Unclassified Controlled Nuclear Information.

(a) *Routine access.* (1) A Reviewing Official is an Authorized Individual for documents or material that the Reviewing Official determines to contain UCNI.

(2) An Authorized Individual, for UCNI in his or her possession or control, may determine that another person is an Authorized Individual who may be granted access to the UCNI, subject to the following limitations, and who may further disseminate the UCNI under the provisions of this section. The person to be granted routine access to the UCNI must—

(i) Have a need-to-know in the performance of official duties or DOE authorized activities for the UCNI to which routine access is to be granted; and

(ii) Be a U.S. citizen who is—

(A) A Government employee or a member of the U.S. Armed Forces;

(B) An employee of a Government contractor or subcontractor, or of a prospective Government contractor or subcontractor for the purpose of bidding on a Government contract or subcontract;

(C) A Government consultant or DOE advisory committee member;

(D) A Member of Congress;

(E) A staff member of a congressional committee or of an individual Member of Congress;

(F) The Governor of a State, his or her designated representative, or a State government official;

(G) A local government official or an Indian tribal government official;

(H) A member of a State, local, or Indian tribal law enforcement or emergency response organization; or

(I) A DOE access permittee authorized access by the Secretary under Part 725 of this title to Restricted Data applicable to civil use of atomic energy; or

(iii) Be a person who is not a U.S. citizen but who is—

(A) A Government employee or a member of the U.S. Armed Forces;

(B) An employee of a Government contractor or subcontractor; or

(C) A Government consultant or DOE advisory committee member; or

(iv) Be a person who is not a U.S. citizen but who may be granted routine access to UCNI by an Authorized Individual in conjunction with—

(A) An international nuclear cooperative activity approved by the Government;

(B) U.S. diplomatic dealings with foreign government officials;

(C) An agreement for cooperation under section 123 of the Atomic Energy Act; or

(D) Provisions of treaties, mutual defense acts, Government contracts or subcontracts.

(3) The Secretary may impose additional administrative controls concerning the granting of routine access to UCNI by an Authorized Individual to a person who is not a U.S. citizen.

(4) An Authorized Individual may only disseminate UCNI to another Authorized Individual or to a person granted special access to UCNI under paragraph (b) of this section.

(5) The Assistant Secretary for Defense Programs may waive any of the requirements for determination of routine access to UCNI specified in paragraph (a) of this section.

(b) *Special access.* (1) A person not authorized routine access to UCNI under paragraph (a) of this section may submit a request for special access to UCNI to the—

Assistant Secretary for Defense
Programs, U.S. Department of Energy,
Washington, DC 20585

(2) Such a request must include—

(i) The name, current residence or business address, birthplace, birthdate, and country of citizenship of the person submitting the request;

(ii) A description of the UCNI for which special access is being requested;

(iii) A description of the purpose for which the UCNI is needed; and

(iv) Certification by the requester of his or her understanding of and willingness to abide by these regulations.

(3) The Assistant Secretary for Defense Programs shall base his or her decision to grant special access to UCNI on an evaluation of—

(i) The sensitivity of the UCNI for which special access is being requested (i.e., the worst-case, adverse effect on the health and safety of the public or the common defense and security which would result from illegal use of the UCNI);

(ii) The purpose for which the UCNI is needed (e.g., will the UCNI be used for commercial or other private purposes or will it be used for public benefit to fulfill statutory or regulatory responsibilities);

(iii) The likelihood of unauthorized dissemination by the requester of the UCNI; and

(iv) The likelihood of the requester using the UCNI for illegal purposes.

(4) The Assistant Secretary for Defense Programs shall attempt to notify a person who requests special access to UCNI within 30 days of receipt of the request as to whether or not special access to the requested UCNI is granted. If a final determination on the request cannot be made within 30 days or receipt of the request, the Assistant Secretary for Defense Programs shall notify the requester, within 30 days of the request, as to when the final determination on the request may be made.

(5) A person granted special access to UCNI is not an Authorized Individual under paragraph (a) of this section and shall not further disseminate the UCNI.

(c) *Notification of responsibilities*—(1) *Routine access*. An Authorised Individual granting routine access to UCNI to another person under paragraph (a) of this section shall notify each person granted such access (other than when the person being granted such access is a Government employee, a member of the U.S. Armed Forces, or an employee of a Government contractor or subcontractor) of applicable regulations and orders concerning UCNI and of any special redistribution limitations that the Authorized Individual determines to apply for the specific UCNI to which routine access is being granted.

(2) *Special access*. The Assistant Secretary for Defense Programs shall notify each person granted special access to UCNI under paragraph (b) of this section of applicable regulations concerning UCNI prior to dissemination of the UCNI to the person.

(d) *Other persons*. Persons not granted routine access to UCNI under paragraph (a) of this section or special access to UCNI under paragraph (b) of this section shall not have access to UCNI.

§ 1017.17 Physical protection requirements.

(a) *General*. UCNI requires protection from unauthorized dissemination. UCNI must be protected and controlled in a manner consistent with that customarily accorded other types of unclassified but sensitive information (e.g., proprietary business information, personnel or medical records of employees, attorney-client information). Each Government agency and Government contractor authorized access to UCNI shall establish and maintain a system for the protection of UCNI in their possession or under their control that is consistent with the physical protection standards established in this section. Each Authorized Individual or person granted special access to UCNI under § 1017.16(b) who receives, acquires, or produces UCNI or a document or material containing UCNI shall take reasonable and prudent steps to ensure that it is protected from unauthorized dissemination by adhering to these regulations and their implementing directives.

(b) *Protection in use or storage*. An Authorized Individual or a person granted special access to UCNI under § 1017.16(b) shall maintain physical control over any document or material containing an UCNI notice that is in use so as to prevent unauthorized access to it. When any document or material containing an UCNI notice is not in use, it must be stored in a secure container (e.g., locked desk or file cabinet) or in a location where access is limited (e.g., locked or guarded office, controlled access facility).

(c) *Reproduction*. A document or material containing an UCNI notice may be reproduced to the minimum extent necessary consistent with the need to carry out official duties without permission of the originator, provided the reproduced document or material is marked and protected in the same manner as the original document or materials.

(d) *Destruction*. A document or material containing an UCNI notice may be disposed of by any method which assures sufficiently complete destruction to prevent its retrieval (providing the disposal is authorized by the Archivist of the United States under 41 CFR 101-11.4 and by agency records disposition schedules).

(e) *Transmission*. (1) A document or material containing an UCNI notice must be packaged to prevent disclosure of the presence of UCNI when transmitted by a means which could allow access to the document or material by a person who is not an Authorized Individual or a person granted special access to UCNI under § 1017.6(b). The address and return address must be indicated on the outside of the package.

(2) A document or material containing an UCNI notice may be transmitted by—

(i) U.S. first class, express, certified, or registered mail;

(ii) Any means approved for the transmission of classified documents or material;

(iii) An Authorized Individual or a person granted special access to UCNI under § 1017.16(b), when he or she can control access to the document or material being transmitted; or

(iv) Any other means determined by the Assistant Secretary for Defense Programs to be sufficiently secure.

(3) UCNI may be discussed or transmitted over an unprotected telephone or telecommunications circuit when required by operational considerations. More secure means of communication should be utilized whenever possible.

(f) *Automated Data Processing (ADP)*. UCNI may be processed or produced on any ADP system which is certified for classified information or which complies with the guidelines of Office of Management and Budget Circular No. A-71, "Security of Federal Automated Information Systems" or which has been approved for such use in accordance with the provisions of applicable DOE directives.

§ 1017.18 Violations.

(a) *Civil Penalty*. Any person who violates section 148 of the Atomic Energy Act or any regulation or order of the Secretary issued under section 148 of the Atomic Energy Act, including these regulations, is subject to a civil penalty. The Assistant Secretary for Defense Programs may recommend to the Secretary imposition of this civil penalty, which shall not exceed $100,000 for each violation.

(1) *Written Notification*. (i) Whenever the Assistant Secretary for Defense Programs believes that a person is subject to imposition of a civil penalty under the provisions of section 148b(1) of the Atomic Energy Act, the Assistant Secretary for Defense Programs shall notify the person in writing by certified mail, return receipt requested, of—

(A) The date, facts, and nature of each act or omission with which the person is charged;

(B) The particular provision of section 148 of the Atomic Energy Act or its implementing regulations or orders involved in the violation;

(C) Each penalty which the Assistant Secretary for Defense Programs proposes to recommend the Secretary impose and its amount;

(D) The right of the person to submit to the Assistant Secretary for Defense Programs the person's written reply to each of the allegations in the notification letter. The person shall mail or deliver any reply letter within twenty days of receipt of the notification letter from the Assistant Secretary for Defense Programs.

(E) The right of the person to submit to the Assistant Secretary for Defense Programs a written request for a hearing under paragraph (a)(2) of this section.

(F) The fact that, upon failure of the person to pay any civil penalty imposed by the Secretary, the penalty may be

a. Security plans and procedures for production or utilization facilities, nuclear material contained in such facilities, or nuclear material in transit (e.g., security inspector or guard orders, patrol schedules, security codes);

b. Security equipment for protection of production or utilization facilities, nuclear material contained in such facilities, or nuclear material in transit (e.g., alarm system designs, characteristics of);

c. Capabilities, deficiencies, or vulnerabilities of a specified security plan, procedure, or system.

3. *Category C.* Declassified Controlled Nuclear Weapon Information includes—

a. Any design of an actual or hypothetical nuclear weapon or component of a nuclear weapon, except for specific examples of such designs approved for public release by the Assistant Secretary for Defense Programs;

b. Any manufacturing technique or process which could be of major assistance in the illegal production of a nuclear weapon or a component of a nuclear weapon; or

c. Information related to the utilization of nuclear weapons which could assist a potential criminal in an act of sabotage or theft of a nuclear weapon or a component of a nuclear weapon.

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ATTACHMENT FOR QUESTION 20

15 CFR 778

PART 778

SPECIAL NUCLEAR CONTROLS

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Countries that are Party to the Nuclear Non-Proliferation Treaty and/or the Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco) .... Supplement No. 2

§ 778.1

PURPOSE

(a) Scope

This Part defines the types of export transactions that are governed by the U.S. policy concerning the non-proliferation of nuclear weapons or explosive devices, or the U.S. maritime nuclear propulsion policy. The controls implement the policies in sections 3(2) (A) and (B) of the Export Administration Act of 1979 (Pub. L. 96-72) and section 309(c) of the Nuclear Non-Proliferation Act of 1978 (Pub. L. 95-242), that is:

(1) To exercise the necessary vigilance from the standpoint of their significance to the national security of the United States;

(2) To further significantly the foreign policy of the United States or to fulfill its international responsibilities; and

(3) To maintain controls over items because of their potential significance for nuclear explosive purposes.

(b) Related Legislation

These controls supplement those exercised by the Nuclear Regulatory Commission and the Department of Energy under the Atomic Energy Act of 1954, as amended by the Nuclear Non-Proliferation Act of 1978 and other statutes, and by the Office of Munitions Control, Department of State, under the Arms Export Control Act of 1976. (See § 770.10.)

§ 778.2

NUCLEAR-RELATED COMMODITIES AND TECHNICAL DATA (THE NUCLEAR REFERRAL LIST)

(a) Commodities Controlled for Nuclear Reasons

Section 309(c) of the Nuclear Non-Proliferation Act of 1978 requires the President to publish procedures regarding the control by the Department of Commerce over export items under its jurisdiction that could be, if used for purposes other than for which the export is intended, of significance for nuclear explosive purposes. The commodities listed on the Commodity Control List (Supplement No. 1 to § 799.1) with "nuclear non-proliferation" included in the "Reason for Control" paragraph of the applicable entry have been identified as those that could be of significance for nuclear explosive purposes, and hence are subject to validated licensing and the procedures established under this Part and under section 309(c) of the Nuclear Non-Proliferation Act of 1978. These commodities are referred to as "The Nuclear Referral List." The procedures established pursuant to section 309(c), which originally appeared at 43 FR 25330 (June 9, 1978), are reprinted as Supplement No. 1 to this Part 778. In addition, any item not on the Nuclear Referral List that requires a validated export license for national security reasons and is intended for a nuclear related end-use or end-user is subject to these procedures. Also, described in § 779.4(c), are certain related technical data that are subject to nuclear non-proliferation controls. The Commodity Control List indicates the countries to which validated licenses are required. Some commodities are controlled for nuclear reasons to all Country Groups, and in certain instances to Canada. For other commodities, the nuclear controls apply to a country only when it is excluded from the list of countries contained in Supplements 2 and 3 of Part 773.

(b) Processing of Applications

Applications for the export of commodities and technical data described in (a) above will be processed in accordance with the interagency review procedures established pursuant to section 309(c) of the Nuclear Non-Proliferation Act reprinted as Supplement No. 1 to this Part, and the applicable provisions of these Regulations.

§ 778.3

ADDITIONAL VALIDATED LICENSE REQUIREMENTS FOR EXPORTS WITH CERTAIN NUCLEAR END-USES.

In addition to the validated license requirements for commodities and technical data referred to in § 778.2 above, a validated license is required for export to all destinations, including Canada, of any other technical data not exportable under the the provisions of General License GTDA (except "operation technical data" and "sales technical data" for export to and use in the countries listed in Supplement No. 2 to Part 773 or Canada) and a validated license is required for export to all destinations, except Canada and the countries listed in Supplement No. 2 to Part 773, of any other commodity.

(a) Designing, developing, fabricating or testing nuclear weapons or nuclear explosive devices;[1,2] or

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[1] Commodities and technical data specifically designed or specifically modified for use in designing, developing or fabricating nuclear weapons or nuclear explosive devices are subject to export licensing or other requirements of the Office of Munitions Control, U.S. Department of State, or the licensing or other restrictions specified in the

(b) Designing, constructing, fabricating, or operating the following facilities, or components for such facilities[3]—

(1) Facilities for the chemical processing of irradiated special nuclear or source material;

(2) Facilities for the production of heavy water;

(3) Facilities for the separation of isotopes of source and special nuclear material; or

(4) Facilities for the fabrication of nuclear reactor fuel containing plutonium.

§ 778.4

EXPORT LICENSING FACTORS

To fulfill the considerations set forth in § 778.1, the following factors are among those used to determine what action should be taken on individual applications subject to § § 778.2 and 778.3—

(a) The stated end-use of the commodity or technical data;

(b) The significance for nuclear purposes of the particular commodity or technical data;

(c) The availability of the commodity or technical data from non-U.S. sources;

(d) The types of assurances or guarantees against use for nuclear explosive purposes or proliferation given in the particular case; and

(e) The non-proliferation credentials of the importing country concerned, based on consideration of factors such as—

(1) A country's status as a party to the Treaty on the Non-Proliferation of Nuclear Weapons or the Treaty for the Prohibition of Nuclear Weapons in Latin America (see Supplement No. 2);

(2) Whether the country has all its nuclear activities under International Atomic Energy Agency safeguards or equivalent full scope safeguards;

(3) Whether there is an agreement for cooperation in the civil uses of atomic energy between the U.S. and the country concerned;

(4) The country's public statements and policies concerning nuclear developments and non-proliferation;

(5) The extent of cooperation in non-proliferation policy generally (indications such as willingness to consult on international non-proliferation issues); and

(6) Intelligence data on a country's nuclear intentions and activities.

In view of the numerous considerations to be weighed in the case-by-case review process and changing circumstances, it is not feasible to specify countries' status for the purpose of implementing these controls.

§ 778.5

MARITIME NUCLEAR PROPULSION

(a) Policy

It is the policy of the United States Government not to participate in and not to authorize United States firms or individuals to participate in foreign *naval* nuclear propulsion plant projects, except under an Agreement for Cooperation on naval nuclear propulsion executed in accordance with section 123(d) of the Atomic Energy Act of 1954. However, it is the policy of the United States Government to encourage United States firms and individuals to participate in *maritime (civil)* nuclear propulsion plant projects in friendly foreign countries provided that United States naval nuclear propulsion information is not disclosed.

(b) Exports of Technology

In view of the close relationship between maritime and naval nuclear propulsion technologies, it is necessary that the United States Government assure itself that United States naval technology will not be disclosed in connection with a foreign maritime nuclear propulsion project. Therefore, a validated export license or reexport authorization must be obtained from the Office of Export Licensing before any disclosure of technical data in connection with a foreign maritime nuclear propulsion project. This technology includes any technical data relating to maritime nuclear propulsion plants, their land prototypes, and special facilities for their construction, support, or maintenance, including any machinery, devices, components, or equipment specifically developed or designed for use in such plants or facilities. Section 779.5(e) contains special provisions and instructions on filing applications for the export of such technology. This requirement applies to transactions, including assignment or

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Atomic Energy Act of 1954, as amended. Similarly, commodities and technical data specifically designed or specifically modified for use in devising, carrying out, or evaluating nuclear weapons tests or nuclear explosions (except such items as are in normal commercial use for other purposes) are subject to the same requirements.

[2] Also see § 779.5(e) for special provisions relating to technical data for maritime nuclear propulsion plants and other commodities.

[3] Such activities may also require a specific authorization from the Secretary of Energy pursuant to section 57 b (2) of the Atomic Energy Act of 1954, as amended, as implemented by the Department of Energy's regulations published in 10 CFR 810.

exchange of personnel between U.S. firms and foreign firms, regardless of the legal relationship between the firms.

§ 778.6

ADVICE OF THE MANUFACTURER

(a) Letter of Inquiry

An exporter who knows the commodities he intends to ship are capable of the uses described in § 778.3, but is not the manufacturer of the commodities and is not sure whether a validated license is required, shall request a written statement from the manufacturer specifying whether under the provisions of § 778.3 the intended export would require a validated export license. In making such a request, the exporter shall fully state the purpose of the request. In all instances in which the manufacturer believes a validated export license is required, the exporter shall apply for such license. However, notwithstanding the advice provided by the manufacturer, the exporter remains responsible for filing an export license application for any export subject to § 778.3. In the event that either the exporter or manufacturer has any doubt about the proposed export he may contact the Office of Export Licensing or other appropriate government agency.

(b) Records Retention

The exporter shall retain a copy of his letter of inquiry and the manufacturer's reply and make them available for inspection, upon demand by the U.S. Department of Commerce, for two years in accordance with the recordkeeping requirements of § 787.13.

§ 778.7

PREPARING APPLICATION

An application for a license to export commodities or technical data subject to the provisions of § 778.2, § 778.3 or § 778.5 shall be prepared and submitted on Form BXA-622P, Application for Export License, in accordance with instructions set forth in § § 772.5 and 779.5(e) with the following additional instructions:

(a) Identification of License Application

Enter the words "NUCLEAR CONTROLS" in Item 4, "Special Purpose," of Form BXA-622P.

(b) Consignee in Country of Ultimate Destination

If the consignee in the country of ultimate destination is not the end-user of the commodities, give the name and address of the end-user in Item 9(b), "Manufacturer's Description of Commodity" or on an attachment to the application, and if known, the specific geographic locations of any installations, establishments, or sites at which the commodities will be used.

(c) Supplier

If the applicant is not also the manufacturer of the commodities and the application is being submitted under § 778.3, indicate on the application, in Item 9(b), "Manufacturer's Description of Commodity" or on an attachment, whether the advice of the manufacturer required in § 778.6 above has been received regarding the necessity for a validated license.

(d) Commodity Description

If the CCL entry in question is divided into subentries, indicate the specific sub-entry which describes the commodity. In addition, specifications or descriptive brochures should be provided when available.

If applicable, include a description of any specific features of design or specific modifications which make the commodity capable of the uses described in § 778.3 above.

(e) End-use

A vague or general end-use description will delay review of an application. Applications indicating resale as the end-use sometimes must be returned for more information.

When submitting an application under § 778.3, fully explain the basis for the knowledge or belief that the commodities are intended for the purpose(s) described therein. Additionally, indicate, if possible, the specific end-use(s) the commodities will have in designing, developing, fabricating, or testing nuclear weapons or nuclear explosive devices or in designing constructing, fabricating, or operating the facilities described in § 778.3.

§ 778.8

EFFECT OF OTHER PROVISIONS

If, at the time of export, a validated license is also required under other provisions of the Export Administration Regulations, the application shall be submitted in accordance with the provisions of Part 778 as well as other applicable provisions. The requirements of Part 778 are applicable in addition to, rather than in lieu of, any other validated license requirement set forth in the Export Administration Regulations. Insofar as consistent with the provisions of part 778, all of the other provisions of the Export Administration Regulations shall apply equally to applications for licenses and licenses issued under these special provisions.

PROCEDURES ESTABLISHED PURSUANT TO THE NUCLEAR NON-PROLIFERATION ACT OF 197

Part F. Export Items Under Section 309(c) of the Act

Section 1. Procedures

a. A list of commodities licensed by the Department of Commerce which, if used for purposes other than those for which the export is intended, could be of significance for nuclear explosive purposes, shall be developed and maintained by the Departments of Commerce and Energy in consultation with the Departments of State and Defense, the Arms Control and Disarmament Agency and the Nuclear Regulatory Commission.

b. Export license applications for commodities on the list referred to in paragraph 1, as well as any other applications which may involve possible nuclear uses, shall be reviewed by the Department of Commerce in consultation with the Department of Energy. When either the Department of Commerce or the Department of Energy believes that—because of the proposed destination of the export, its timing, or other relevant considerations—a particular application should be reviewed by other agencies, or denied, such application shall be referred to the Subgroup on Nuclear Export Coordination. The Subgroup shall promptly consider any such application and provide its advice and recommendations to the Department of Commerce. Disagreements shall be handled in accordance with the provisions of section 5 of Part A. [Section 5 indicates that, if interagency differences cannot be resolved, the issue may be referred to the NSC Ad Hoc Group on Non-Proliferation or, thereafter, the President. Notwithstanding interagency differences, the Department of Commerce has the authority to issue or deny licenses, provided it gives all other concerned agencies five working days notice.]

c. Reviewing agencies shall promptly, but not later than 30 days after receipt from the Department of Commerce of an application, provide their views thereon to the Department of Commerce. If, however, it is not possible to provide views within this time or if, at any point during review, it appears that final action on an application will not be completed within 60 days of receipt by the Department of Commerce, any agency which requires additional time shall inform the Department of Commerce at the earliest possible time of the issues involved and provide an estimate of the time needed to complete its review. The Department of Commerce will then advise the exporter in writing as required by section 4(g)(1) of the Export Administration Act of 1969, as amended.

d. If the Subgroup recommends denial of an application, the reasons therefor shall be articulated for the record. If the Department of Commerce agrees with the recommendation, that Department, in accordance with section 4(g)(2)(A) of the Export Administration Act of 1969, as amended, shall notify the applicant in writing of the negative considerations raised with respect to such license application. Before final action is taken on the application, the applicant shall be afforded the opportunity to respond within 15 days to such negative considerations. If appropriate, the applicant's response will be made available to the Subgroup for further review and advice. In the event of any disagreement which cannot be resolved between agencies, the provisions in section 5 of Part A shall be followed.

COUNTRIES THAT ARE PARTY TO THE NUCLEAR NON-PROLIFERATION TREATY AND/OR THE TREATY FOR THE PROHIBITION OF NUCLEAR WEAPONS IN LATIN AMERICA (TREATY OF TLATELOLCO)*

Afghanistan
Australia
Austria
Bahamas*
Bangladesh
Barbados
Belgium
Benin
Bolivia
Botswana
Bulgaria
Burundi
Cambodia
Cameroon
Canada
Cape Verde
Central African Republic
Chad
China (Taiwan)
Colombia*
Congo
Costa Rica
Cyprus
Czechoslovakia
Denmark
Dominican Republic*
Ecuador*
El Salvador
Ethiopia
Fiji
Finland
Gabon
Gambia, The
German Democratic Republic
Germany, Federal Republic of
Ghana
Greece
Grenada*
Guatemala*
Guinea-Bissau
Haiti*
Honduras
Hungary
Iceland
Indonesia
Iran
Iraq
Ireland
Italy
Ivory Coast
Jamaica*
Japan
Jordan
Kenya
Korea, Republic of
Laos
Lebanon
Lesotho
Liberia
Libya
Liechtenstein
Luxembourg
Madagascar, Republic of
Malaysia
Maldives
Mali
Malta
Mauritius
Mexico*
Mongolian People's Republic
Morocco
Nepal
Netherlands
New Zealand
Nicaragua*
Nigeria, Federation of
Norway
Panama*
Paraguay*
Peru*
Philippines
Poland
Portugal
Romania
Rwanda
Saint Lucia
San Marino
Senegal
Sierra Leone
Singapore
Somalia
Sri Lanka
Sudan
Suriname
Swaziland
Sweden
Switzerland
Syrian Arab Republic
Thailand
Togo
Tonga
Trinidad and Tobago
Tunisia
Turkey
Tuvalu
Uganda
Union of Soviet Socialist Republics
United Kingdom
United States
Upper Volta
Uruguay*
Vatican City
Venezuela
Vietnam, Republic of
Western Samoa
Yemen, People's Democratic Republic of
Yugoslavia
Zaire

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*As of May 1, 1980 Those countries marked with an asterisk are also party to the Treaty of Tlatelolco and have waived this treaty's entry into force provisions. Colombia and Trinidad and Tobago are Non-Proliferation Treaty signatories.

ATTACHMENT FOR QUESTION 20
15 CFR 779

PART 779

TECHNICAL DATA

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§ 779.1

DEFINITIONS[1]

(a) Technical Data[2]

"Technical Data" means information of any kind that can be used, or adapted for use, in the design, production, manufacture, utilization, or reconstruction of articles or materials. The data may take a tangible form, such as a model,[3] prototype,[3] blueprint, or an operating manual (the tangible form may be stored on recording media); or they may take an intangible form such as technical service. All software is technical data.

(b) Export of Technical Data[4,5]

(1) Export of technical data. "Export of Technical Data" means—

(i) An actual shipment or transmission of technical data out of the United States[6];

(ii) Any release of technical data in the United States with the knowledge or intent that the data will be shipped or transmitted from the United States to a foreign country; or

(iii) Any release of technical data of U.S.-origin in a foreign country.

(2) Release of technical data. Technical data may be released for export through—

(i) Visual inspection by foreign nationals of U.S.-origin equipment and facilities;

(ii) Oral exchanges of information in the United States or abroad; and

(iii) The application to situations abroad of personal knowledge or technical experience acquired in the United States.

(c) Reexport of Technical Data

"Reexport of Technical Data" means an actual shipment or transmission from one foreign country to another, or any release of technical data of U.S. origin in a foreign country with the knowledge or intent that the data will be shipped or transmitted to another foreign country. Technical data may be released for reexport through—

(1) Visual inspection of U.S.-origin equipment and facilities abroad;

(2) Oral exchanges of information abroad; and

(3) The application to situations abroad of personal knowledge or technical experience acquired in the United States.

§ 779.2

LICENSES TO EXPORT

Except as provided in § 770.3(a), an export of technical data must be made under either a U.S. Department of Commerce general license or a validated export license. (See § 771.1 and 772.2 for definitions of "general" and "validated" licenses.) General Licenses *GTDA* and *GTDR* (see § 779.3 and 779.4 below) apply to specific types of exports of technical data. A validated license is required for any export of technical data where these general licenses do not apply, except in the case of certain exports to Canada.[7,8]

§ 779.3

GENERAL LICENSE *GTDA:* Technical Data Available to all Destinations

A General License designated *GTDA* is hereby established authorizing the export to all destinations of technical data described in § 779.3(a), (b), or (c) below:

(a) Data Generally Available

Data that have been made generally available to the public in any form, including—

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[1] See § 770.2 for definitions of other terms used in this regulation.

[2] The provisions of Part 779 do not apply to "classified" technical data, *i.e.* technical data that have been officially assigned a security classification (e.g. "top secret," "secret," or "confidential") by an officer or agency of the U.S. Government. The export of classified technical data is controlled by the Office of Munitions Control of the U.S. Department of State or the U.S. Nuclear Regulatory Commission, Washington, D.C.

[3] Models and prototypes are controlled both as technical data and as commodities. The more restrictive Export Administration requirements apply to their export. See Part 799 for the commodity controls.

[4] License applications for, or questions about, the export of technical data relating to commodities which are licensed by U.S. Government agencies other than the U.S. Department of Commerce shall be referred to such other appropriate U.S. Government agency for consideration (see § 770.10).

[5] Patent attorneys and others are advised to consult the U.S. Patent Office, U.S. Department of Commerce, Washington, D.C. 20231, regarding the U.S. Patent Office regulations concerning the filing of patent applications or amendments in foreign countries. In addition to the regulations issued by the U.S. Patent Office, technical data contained in or related to inventions made in foreign countries or in the United States, are also subject to the U.S. Department of Commerce regulations covering the export of technical data, in the same manner as the export of other types of technical data.

[6] As used in this Part 779, the United States includes its possessions and territories.

[7] Only the restrictions set forth in § 779.4(c) apply to exports of technical data for use in Canada. In all other cases, an export of technical data for use in Canada may be made without either a validated or a general license.

[8] Although Export Administration may provide general information on licensing policies regarding the prospects of approval of various types of export control actions, including actions with respect to technical data, normally it will give a formal judgment respecting a specific request for an action only upon the actual submission of a formal application or request setting forth all of the facts relevant to the export transaction and supported by all required documentation.

Advice is always available, however, regarding any questions as to the applicability of a general license. Such questions should be submitted by letter to the U.S. Department of Commerce, Office of Export Licensing, P.O. Box 273, Washington, D.C. 20044.

(1) Data released orally or visually at open conferences, lectures, trade shows, or other media open to the public; and

(2) Publications that may be purchased without restrictions at a nominal cost, or obtained without costs, or are readily available at libraries open to the public.

The term "nominal cost" as used in § 779.3(a)(2) above, is intended to reflect realistically only the cost of preparing and distributing the publication and not the intrinsic value of the technical data. If the cost is such as to prevent the technical data from being generally available to the public, General License *GTDA* would not be applicable.

(b) Scientific or Educational Data

(1) Dissemination of information not directly and significantly related to design, production, or utilization in industrial processes, including such dissemination by correspondence, attendance at, or participation in, meetings; or

(2) Instruction in academic institutions and academic laboratories, excluding information that involves research under contract related directly and significantly to design, production, or utilization in industrial processes.

(c) Patent Applications

Data contained in a patent application prepared wholly from foreign-origin technical data where such application is being sent to the foreign inventor to be executed and returned to the United States for subsequent filing in the U.S. Patent and Trademark Office. (No validated export license from the Office of Export Licensing is required for data contained in a patent application, or an amendment, modification, supplement or division thereof for filing in a foreign country in accordance with the regulations of the Patent and Trademark Office in 77 CFR Part 5. See § 770.10(j).)

§ 779.4

GENERAL LICENSE *GTDR:* Technical Data Under Restriction

A general license designated *GTDR* is hereby established authorizing the export of technical data that are not exportable under the provisions of General License *GTDA*, subject to the provisions, restrictions, exclusions, and exceptions set forth below and subject to the written assurance requirement set forth in § 779.4(f).

(a) Country Groups S and Z Restrictions

No technical data may be exported under this general license to Country Group S or Z.

(b) Restrictions applicable to Country Groups Q, W, Y, T and V, Afghanistan and the People's Republic of China

(1) The following are definitions of terms used to describe certain types of technical data restricted for export to Country Groups Q, W, Y, T and V, Afghanistan and the People's Republic of China;

(i) "Operation technical data" is defined as explicit data in such forms as manuals, instruction sheets, blueprints or software, provided they are:

(A) Sent as part of a transaction involving and directly related to, a commodity licensed for export from the United States, or specifically authorized for reexport, to the same consignee and destination to which the commodity was or will be exported under this license of authorization;

(B) A single shipment sent no later than one year following the shipment of the commodity to which the technical data are related;

(C) Of a type delivered with the commodity in accordance with established business practice;

(D) Necessary to the assembly, installation, maintenance, repair, or operation of the commodity[9]; and

(E) Not related to the production, manufacture, or construction of the commodity.

(ii) "Sales technical data" is defined as data supporting a prospective or actual quotation, bid, or offer to sell, lease, or otherwise supply any commodity, plant or technical data, provided that:

(A) The commodity, plant or technical data are not (and are not related to) a commodity:

(1) Identified by the code letter "A" following the Export Control Commodity Number (ECCN) on the Commodity Control List (Supplement No. 1 to § 799.1), or

(2) Shown in Supplement Nos. 2 or 3 Part 770 (controlled by U.S. Department of State and Nuclear Regulatory Commission, respectively);

(B) The technical data are of a type customarily transmitted with a prospective or actual quotation, bid, or offer (in accordance with established business practice); and

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[9] Section 776.10(a)(1)(vii) requires exporters of digital computer equipment to describe on their license application any software, including that shipped under General License GTDR, to be used with the equipment.

(C) The export will not disclose the detailed design, production, or manufacture, or the means of reconstruction, of either the quoted item or its product. Similarly, a quotation, bid, or offer for technical data or services must not disclose the detailed technical process involved.

NOTE

Neither this authorization nor its use means that the U.S. Government intends, or is committed, to approve an export license application for any commodity, plant or technical data that may be the subject of the transaction to which such quotation, bid, or offer relates. Exporters are advised to include in any quotations, bids, or offers, and in any contracts entered into pursuant to such quotations, bids, or offers, a provision relieving themselves of liability in the event that an export license (when required) is not approved by the Office of Export Licensing.

(iii) For definitions relating to computer software, see Advisory Note 12 in Supplement No. 3 to Part 779.

(2) No technical data may be exported under this general license to Country Groups Q, W, or Y or to Afghanistan, except:

(i) Software that is not explicitly controlled in Supplement No. 3 to Part 779, or that is not related to any commodity controlled for national security or nuclear non-proliferation reasons on the Commodity Control List, or that is not related to any commodity/technical data listed in paragraphs (c) or (d) of this section.

(ii) "Operation technical data" defined in paragraph (b)(1)(i) of this section, including software in object code explicitly listed in Supp. No. 3 to Part 779 and described on the license application for the commodity, but subject to the restrictions contained in § 779.4(c) and (d).

(iii) "Sales technical data" defined in paragraph (b)(1)(ii) of this section.

(3) The following technical data may be exported under this general license to Country Groups T and V, *except* to the People's Republic of China:

(i) "Sales technical data", as defined in paragraph (b)(1)(ii) of this section, but including "sales technical data" for a commodity identified by the code letter "A" following the Export Control Commodity Number (ECCN) on the Commodity Control List; and

(ii) "Operation technical data" as defined in paragraph (b)(1)(i) of this section, but including "operation technical data", for commodities listed in paragraph (d) of this section.

(4) The following technical data may be exported under this general license to the People's Republic of China:

(i) "Operation technical data" as defined in paragraph (b)(1)(i) of this section, but subject to the restrictions contained in § 779.4(c);

(ii) "Sales technical data" as defined in paragraph (b)(1)(ii) of this section.

(5) Software updates that are intended for and are limited to correction of errors ("fixes" to "bugs" that have been identified) qualify for export under General License *GTDR* without written assurances to Country Groups Q, W, Y, T and V, Afghanistan, and the People's Republic of China, provided that the updates are being exported to the same consignee and do not enhance the functional capabilities of the initial software package.

(c) Technical Data Restrictions Applicable to All Destinations.

No technical data[10] (other than operating and maintenance instructional material and "sales technical data" for export to and use in the countries listed in Supplement No. 2 to Part 773 and Canada) related to the following may be exported under this general license, and a validated export license is required for all destinations, *including Canada*, for export of technical data related to the following:

(1) Any commodity where the exporter knows or has reason to know that it will be used directly or indirectly in the following activities, whether or not it is specifically designed or modified for such activities (see § 778.3)—

(i) Designing, developing, fabricating or testing nuclear weapons or nuclear explosive devices,[11,12] or

(ii) Designing, constructing, fabricating, or operating the following facilities, or components for such facilities[13]—

(A) Facilities for the chemical processing of irradiated special nuclear or source material;

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[10] This restriction does not apply to data included in the foreign filing of a patent, provided such foreign filing of a patent application is in accordance with the regulations of the U.S. Patent Office (See § 779.3(c)).

[11] Commodities and technical data specifically designed or specifically modified for use in designing, developing or fabricating nuclear weapons or nuclear explosive devices are subject to export licensing or other requirements of the Office of Munitions Control, U.S. Department of State, or the licensing or other restrictions specified in the Atomic Energy Act of 1954, as amended. Similarly, commodities and technical data specifically designed or specifically modified for use in devising, carrying out, or evaluating nuclear weapons tests or nuclear explosions (except such items as are in normal commercial use for other purposes) are subject to the same requirements.

[12] Also see § 779.8(e) for special provisions relating to technical data for maritime nuclear propulsion plants and other commodities.

[13] Such activities may also require a specific authorization from the Secretary of Energy pursuant to section 57.b.(2) of the Atomic Energy Act of 1954, as amended, as implemented by the Department of Energy's regulations published in 10 CFR 810.

(B) Facilities for the production of heavy water;

(C) Facilities for the separation of isotopes of source and special nuclear material; or

(D) Facilities for the fabrication of nuclear reactor fuel containing plutonium.

(2) Training of personnel for paragraph (1) of this section.

(3) Neutron generator systems, including tubes, designed for operation without an external vacuum system, and utilizing electrostatic acceleration to induce a tritium-deuterium nuclear reaction; and specially designed parts, n.e.s.

(4) Porous nickel.

(5) Plants specially designed for the production of uranium hexafluoride (UF_6), and specially designed or prepared equipment (including UF_6 purification equipment) and specially designed parts and accessories therefor.

(6) Inverters, converters, frequency changers, and generators having a multiphase electrical power output within the range of 600 to 2000 hertz.

(7) Cylindrical tubing, raw, semifabricated, or finished forms, made of aluminum alloy (7000 series) maraging steel or high-strength titanium alloys (*e.g.*, Ti-6 Al-4 V, etc.) having the following characteristics:

(i) Wall thickness of 1/2 inch, or less; and

(ii) Diameter of 3 inches or more.

(8) Cylindrical rings, or single convolution bellows, made of high-strength steels having all of the following characteristics:

(i) Tensile strength equal to or greater than 150,000 psi;

(ii) Wall thickness of 3 millimeters or less; and

(iii) Diameter of 3 inches or more.

(9) Pipes, valves, fittings, heat exchangers, or magnetic, electrostatic or other collectors made of graphite or stainless steel, or of other materials coated in graphite, yttrium or yttrium compounds resistant to the heat and corrosion of uranium vapor.

(10) Centrifugal balancing machines, fixed or portable, horizontal or vertical, having *all* of the following characteristics:

(i) Suitable for balancing flexible rotors having a diameter of from 3 inches to 16 inches, and a length of 24 inches or more; and

(ii) Mass capability of from 2 to 50 lbs.; and

(iii) Capable of balancing to a residual imbalance of 0.001 in-lb./lb. per plane or greater; and

(iv) Capable of balancing in three or more planes.

(11) Moisture and particulate separator systems covered by ECCN 1416A(g), as follows:

(i) Technical data for preventing water leakage around the filter stages; *and*

(ii) Technical data for integrating the components of such a system.

(d) Restrictions Applicable to All Destinations Except Canada

No technical data relating to the following commodities or processes, other than technical data authorized for T and V destinations under paragraphs (b)(3) and (4) of this section,[14] or certain technical data authorized to COCOM member countries as indicated in Supplement No. 4, paragraphs (7) and (8), may be exported under General License GTDR,[14A] and exports of these technical data to all destinations, except Canada,[15] require a validated export license[15A]

● (1) Technical data including "specially designed software" for aircraft and helicopter airframes, aero-engines and related parts and components. (See paragraphs (6) through (8) of Supplement No. 4 to Part 779.)

(2) Electrical and electronic instruments specially designed for testing or calibrating the airborne direction finding, navigational, and radar equipment;

(3) Airborne electronic transmitters, receivers, and transceivers;

(4) Airborne electronic direction finding equipment;

(5) Airborne electronic or inertial navigation and radar equipment[16];

(6) Watercraft of hydrofoil and hovercraft (air bubble) design;

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[14] Data included in the foreign filing of a patent is also excluded from the restrictions set forth in § 779.4(d) if such foreign filing of a patent application is in accordance with the regulations of the U.S. Patent Office.

● [14A] The availability of General License GTDR for exports of technical data to COCOM member nations, as indicated in paragraphs 7 and 8 of Supplement No. 4 to this Part 779, is subject to the written assurance requirements provided in § 779.4(f)(2).

[15] Only the restrictions set forth in § 779.4(c) apply to exports of technical data for use in Canada. In all other cases, an export of technical data for use in Canada may be made without either a validated or a general license. For reexport provisions applicable to Canada and other countries, see § 779.8(b) and (c).

● [15A] Technical data relating to identified military aircraft, military helicopters and military propulsion systems are subject to the export licensing authority of the U.S. Department of State.

[16] Exports of technical data relating to the design, development, production or manufacture, of inertial navigation equipment, its related parts, components or subsystems, and exports of technical data relating to the repair of parts, components or subsystems of inertial navigational systems (including accelerometers and gyroscopes) not certified by the FAA or not used as an integral part of civil aircraft, are controlled by the Office of Munitions Control, Department of State.

(7) Submersible watercraft other than military or naval types[17];

(8) Certain airborne multispectral infrared detection and tracking equipment (infrared scanners and their associated technology designed for military or space application remain under the export licensing jurisdiction of the Office of Munitions Control, Department of State);

(9) Infrared imaging equipment;

(10) Technical data specific to the production of "superalloys" (see ECCN 1301A of the Commodity Control List), and technical data specified in operation technical data (§779.4(b)(1)(i)) for Country Groups Q, W, Y and Afghanistan, regardless of the export controls on the equipment used with such technical data; melting, remelting and degassing techniques specific to the production of "superalloys"; and technical data specific to the production of "superalloys" in crude and semi-fabricated forms;

(11) Technical data (including processing conditions) and procedures for the regulation of temperature, pressure and/or atmosphere in autoclaves when used for the production of composites or partially processed composites using materials controlled by ECCN 1763A of the Commodity Control List; and technical data specified in §779.4(b)(1)(i) relating to equipment specified in ECCNs 1203A, 4203B, 1312A for Country Groups Q, W, Y and Afghanistan;

(12) Insert gas and vacuum atomizing technology to achieve sphericity and uniform size of particles in metal powders, regardless of the type of metal and the export controls on the powder, and technical data specified in §779.4(b)(1)(i) relating to equipment specially designed to produce spherical metal powders for Country Groups Q, W, Y and Afghanistan;

(13) Technical data for floating drydocks, limited to the following:

(i) That portion of the design of a floating dock covered by ECCN 1425A(a) that relates to the incorporation of the three types of facilities described in the Note to ECCN 1425A(a); and

(ii) Design, production and use of on-board floating dock facilities covered by ECCN 1425A(b) that permit the operation, maintenance and repair of nuclear reactors;

(14) Military trainer aircraft, specified in ECCN 2460A, except reciprocating aircraft engines;

(15) Military instrument flight trainers;

(16) Technical data for metal-working manufacturing processes and specially designed "software" therefor; (see Supplement No. 4 to Part 779)

(17) "Software" and technical data for "automatically controlled industrial systems" to produce assemblies or discrete parts (see Supplement No. 4 to Part 779);

(18) Databases generated by the use of equipment controlled by ECCN 1363A;

(19) Technical data for application to non-electrical devices to achieve:

(i) Inorganic overlay coatings or inorganic surface modification coatings—(*a*) specified in column 3 of the Table set forth in Supplement No. 4 to Part 779, (*b*) on substrates specified in column 2 of that same Table, (*c*) by processes as defined in Technical Note (a) to (h) and specified in column 1 of that same Table, and specially designed software therefor; and

(20) Design and production technical data for commodities that are controlled for nuclear weapons delivery reasons (see §776.18 and Supplement No. 4 of this part), including related software;

• (21) Development and production technical data, including "specially designed software," for reciprocating diesel engine ground vehicle propulsion systems (see paragraph (5) of Supplement No. 4 to Part 779);

• (22) Technical data including "specially designed software" for marine gas turbine engines covered under ECCN 1431A (see paragraph (9) of Supplement No. 4 to Part 779);

• (23) Technical data including "specially designed software" for industrial gas turbine engine components covered under ECCN 1372A (see paragraph (8) or (9) of Supplement No. 4 to this part); and

(24) Any other commodity under the export control jurisdiction of Export Administration, if such commodity is not covered by an entry on the Commodity Control List.

(e) Restrictions Applicable to Republic of South Africa and Namibia

(1) General Prohibition. No technical data may be exported or reexported to the Republic of South Africa or Namibia under this General License *GTDR* where the exporter or reexporter knows or has reason to know that the data or any products of the data are for delivery, directly or indirectly, to or for use by or for military or police entities in these destinations or for use in servicing equipment owned, controlled or used by or for such entities. As used in this paragraph (e), the term "any products of the data" includes the direct product[18] of the data and any subsequent products of the direct product. No technical data for use in servicing or manufacturing computers, and no computer software, may be exported or reexported to the Republic of South Africa or Namibia under this General License GTDR where the exporter or reexporter knows or has reason to know that the data will be made available to or for use by, or is intended to be used for, apartheid-enforcing entities identified in Supplement No. 1 to Part 785. In addition, no technical data relating to the commodities listed in Supplement No. 2 to this Part 779 may be exported or reexported under this General License *GTDR* to any consignee in the Republic of South Africa or Namibia.

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[17] Technical data relating to military or naval submersible watercraft are subject to the export licensing authority of the U.S. Department of State.

(2) **Written Assurance.** In addition to any written assurances that may be required by paragraph (f) of this section, no export or reexport of technical data, including computer software, may be made to the Republic of South Africa or Namibia under this General License GTDR until the exporter has received written assurance from the importer that neither the technical data nor the direct product of the data will be made available to or for use by or for military or police entities of the Republic of South Africa or Namibia. If the technical data is intended to service or manufacture computers or consists of computer software, the written assurance must also state that the data will not be made available to or for use by, and neither the data nor the direct product of the data is intended to be used for, the apartheid-enforcing entities identified in Supplement No. 1 to Part 785. To facilitate this assurance, the potential exporter shall provide a current copy of Supplement No. 1 to Part 785 to the intended recipient at the time the written assurance is requested.

(f) Written Assurance Requirements

(1) **Requirement of written assurance for certain data, services, and materials.** No export of technical data of the kind described in paragraphs (f)(1)(i)*(A)* through *(Q)* (not *(R)*) of this section may be made under the provisions of this General License *GTDR* until the exporter has received written assurance from the importer that neither the technical data nor the direct product[19] thereof is intended to be shipped, either directly or indirectly, to Country Group Q, S, W,[20] Y, or Z, or Afghanistan or the People's Republic of China, except as provided in paragraph (f)(1)(ii) of this section. No export of technical data of the kind described in paragraph (f)(1)(i)*(R)* may be made under the provisions of this General License *GTDR* until the exporter has received written assurance from the importer that neither the technical data nor the direct product[19] thereof is intended to be shipped, directly or indirectly, to the Kama River (Kam AZ) or ZIL truck plants in the U.S.S.R., except as provided in paragraph (f)(1)(ii) of this section. The required assurance may be in the form of a letter or other written communication from the importer evidencing such intention, or a licensing agreement that restricts disclosure of the technical data to use only in a country other than Country Group Q, S, W, Y, or Z, or Afghanistan or the People's Republic of China, and prohibits shipments of the direct product[19] thereof by the licensee to Country Group Q, S, W, Y, or Z, or Afghanistan or the People's Republic of China or, for data of the kind described in § 779.4(f)(1)(i)*(R)*, to the Kama River (Kam AZ) or ZIL truck plants in the U.S.S.R. An assurance included in a licensing agreement will be acceptable for all exports made during the life of the agreement. If such assurance is not received, this general license is not applicable and a validated export license is required. An application for such validated license shall include an explanatory statement setting forth the reasons why such assurance cannot be obtained. In addition, this general license is not applicable to any export of technical data of the kind described in paragraphs (f)(1)(i)*(A)* through *(Q)* (not *(R)*) of this section if, at the time of export of the technical data from the United States, the exporter knows or has reason to believe that the direct product to be manufactured abroad by use of the technical data is intended to be exported or reexported, directly or indirectly, to Country Group Q, S, W, Y, or Z, or Afghanistan or the People's Republic of China, or, for data of the kind described

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[18] The term "direct product," as used in this paragraph, is defined to mean the immediate product (including processes and services) produced directly by use of the technical data.

[19] The term "direct product," as used in this sentence and in this context only, is defined to mean the immediate product (including processes and services) produced directly by use of the technical data, except that petroleum or chemical products other than molecular sieves or catalysts are not included in this definition. The coverage of the term does not extend to the results of the use of such "direct product." An example of the direct product of technical data is reforming process equipment designed and constructed by use of the technical data exported, but the aromatics produced by the reforming process equipment are not immediate or direct products of these technical data. However, if the technical data are a formula for producing aromatics, the aromatics, although they are immediate products of the data, are not included in this definition of direct product, since they are petroleum products. Conversely, if the technical data are a formula for producing either molecular sieves or catalysts, the foreign-produced molecular sieves and catalysts are included in the definition of direct product.

[20] Effective April 26, 1971, Country Group W no longer included Romania. Assurances executed prior to April 26, 1971, and referring to Country Group W continue to apply to Romania as well as Poland. Effective June 2, 1980, Hungary was added to Country Group W, which at that time included only Poland. Assurances executed prior to June 2, 1980 and referring to Country Group Y continue to apply to Hungary. Assurances executed on or after June 2, 1980 and referring to Country Group W apply to Hungary as well as Poland.

in § 779.4(f)(1)(i)(R), to the Kama River (Kam AZ) or ZIL truck plants in the U.S.S.R.

(i) Technical data relating to the following commodities—

[Page 7 follows]

(A) Electronic computers, if the technical data is software listed in Supplement No. 3 to Part 779. (Software not listed in Supplement No. 3 to Part 779 or any ECCN entry, or in § 779.4(c) or (d) may be exported to Country Groups T & V, without written assurance.)

(B) Pyrolitically-derived materials formed on a mold, mandrel or other substrate from precursor gases that decompose in the 1,573K (1,300° C) to 3.173K (2,900° C) temperature range at pressures of 133.3 Pa to 19.995 kPa (including the composition of precursor gases, flow rates, and process control schedules and parameters);

(C) Other gravity meters (gravimeters); and parts and accessories, n.e.s.;

(D) Other transonic, supersonic, hypersonic and hypervelocity wind tunnels and devices; and parts and accessories, n.e.s.;

(E) Watercraft of 65 feet and over in overall length, designed to include motors or engines of 600 horsepower or over and greater than 45 displacement tons;

(F) Methyl methacrylate, cross-linked, hot stretched, clear, film, sheeting, or laminates;

(G) Doppler sonar navigation systems;

(H) Aerial camera film, sensitized and unexposed, as follows—

(1) Having spectral sensitivities at wavelengths greater than 7,500 Angstroms or at wavelengths less than 2,000 Angstroms; or

(2) Having resolving powers (using a Test-Object Contrast of 1,000:1) of 200 line pairs/mm or more or with a base thickness before coating of 0.0025 inch or less;

(I) Continuous tone aerial duplicating film, sensitized and unexposed, having resolving powers (using a Test-Object Contrast of 1,000:1) of 300 line pairs/mm or more;

(J) Instrumentation and/or recording film, sensitized and unexposed, having photo-recording sensitivities (as based on the reciprocal of the tungsten exposure in meter-candle-seconds at an exposure time of 0.0001 second) of 125 or more and a resolving power (using a Test-Object Contrast of 1,000:1) of 55 line pairs/mm or more and with a base thickness before coating of 0.004 inch or less and capable of being processed in solutions with alkalinities of pH 10 or above at temperatures greater than 85° F;

(K) Technical data/software specifically identified in ECCN 1391A. (Operation software defined by § 779.4(b)(1) shall be described in the license applications for these commodities.);

(L) Technical data for the design and production (except assembly and testing) of two-axis numerical control units with an "embedded" computer;

(M) Other high speed continuous writing, rotating drum cameras capable of recording at rates in excess of 2,000 frames per second; and parts and accessories, n.e.s.;

(N) Other 16 mm high-speed motion picture cameras capable of recording at rates in excess of 2,000 frames per second; and parts and accessories, n.e.s.;

(O) Single crystal sapphire substrates:

(P) [Reserved]

(Q) Terminal, multiplex or modem equipment designed for or used as components, accessories or sub-assemblies of frequency, time or space division telephone-switching systems employing digital transmission techniques designed at a data signaling rate of 2.1 megabits or less.

(R) Commodities used directly in production, assembly, or testing of trucks, truck components, or accessories at the Kama River (Kam AZ) or ZIL truck plants in the U.S.S.R.

(ii) The limitations set forth in this § 779.4 (f)(1) do not apply to the export of—

(A) Technical data included in an application for the foreign filing of a patent, provided such foreign filing of a patent application is in accordance with the regulations of the U.S. Patent Office; and

(B) Sales technical data supporting a price quotation as authorized in § 779.4 (b)(3) and (4) above.

(2) Requirement of written assurance for certain additional products and destinations.

(i) Except for technical data requiring a written assurance in accordance with the provisions of § 779.4 (f)(1) above, and except as provided in § 779.4 (f)(2)(v) below, no export of technical data relating to the commodities described below in this § 779.4 (f)(2) may be made under the provisions of this General License *GTDR* until the U.S. exporter has received a written assurance from the foreign importer that, unless prior authorization is obtained from the Office of Export Licensing, the importer will not knowingly—

(A) Reexport, directly or indirectly, to Country Group Q, S, W,[21] Y, or Z, or Afghanistan or the People's Republic of China any technical data relating to commodities identified by the symbol "W" in the paragraph of any entry on the Commodity Control List titled "Validated License Required";

(B) Export, directly or indirectly, to Country Group Z any direct product[22] of the technical data if such direct product is identified by the symbol "W" in the paragraph of any entry on the Commodity Control List titled "Validated License Required;" or

(C) Export, directly or indirectly, to any destination in Country Group Q, S, W,[21] Y or Afghanistan or the People's Republic of China, any direct product of the technical data if such direct product is identified by the code letter "A" following the Export Control Commodity Number on the Commodity Control List.

(ii) If the direct product[23] of any technical data is a complete plant or any major component of a plant that is capable of producing a commodity identified by the symbol "W" in the paragraph of any entry on the Commodity Control List titled "Validated License Required" or appears in the U.S. Munitions List, a written assurance by the person who is or will be in control of the distribution of the products of the plant (whether or not such person is the importer) shall be obtained by the U.S. exporter (via the foreign importer), stating that, unless prior authorization is obtained from the Office of Export Licensing, such person will not knowingly—

(A) Reexport, directly or indirectly, to Country Group Q, S, W,[21] Y, Z, or Afghanistan or the People's Republic of China, the technical data relating to the plant or the major component of a plant;

(B) Export, directly or indirectly, to Country Group Z the plant or the major component of a plant (depending upon which is the direct product[22,23] of the technical data) or any product of such plant or of such major component if such product of the plant is identified by the symbol "W" in the paragraph of any entry on the Commodity Control List titled "Validated License Required" or appears in the U.S. Munitions List; or

(C) Export, directly or indirectly, to Country Group Q, S, W, Y, or Afghanistan or the People's Republic of China, the plant or the major component of a plant (depending upon which is the direct product of the technical data), or any product of such plant or of such major component, if such product is identified by the code letter "A" following the Export Control Commodity Number on the Commodity Control List, or appears in the U.S. Munitions List.

NOTE

Effective April 1, 1964 § 779.4(f)(2)(ii) *(B)* and *(C)* required certain written assurances relating to the disposition of the products of a complete plant or major component of a plant which is the direct product of unpublished technical data of U.S. origin exported under General License *GTDR*.

Except as to commodities identified by the code letter "A" following the Export Control Commodity Number on the Commodity Control List, and items on the U.S. Munitions List, the effective date of the written assurance requirements for plant products as a condition of using General License *GTDR* for export of this type of technical data is hereby deferred until further notice, subject to the following limitations:

1. The exporter shall, at least two weeks before the initial export of the technical data, notify the Office of Export Licensing, by letter, of the facts required to be disclosed in an application for a validated export license covering such technical data; and

2. The exporter shall obtain from the person who is or will be in control of the distribution of the products of the plant (whether or not such person is the importer) a written commitment that he will notify the U.S. Government, directly or through the exporter, whenever he enters into negotiations to export any product of the plant to any destination covered by § 779.4(f)(2)(ii)*(B)* of this part, when such product is not identified by the code letter "A" following the Export Control Commodity Number on the Commodity Control List and requires a validated license for export to Country Group W by the information set forth in the applicable CCL entry in the paragraph titled "Validated License Required." The notification should state the product, quantity, country of destination, and the estimated date of shipment.

Moreover, during the period of deferment, the remaining written assurance requirements of § 779.4(f)(2)(ii) *(B)* and *(C)* as to plant products that are identified by the code letter "A" following the Export Control Commodity Number on the Commodity Control List, or are on the U.S. Munitions List, will be waived if the plant is located in one of the following COCOM countries: Belgium, Canada, Denmark, the Federal Republic of Germany, France, Greece, Italy, Japan, Luxembourg, The Netherlands, Norway, Portugal, Spain, Turkey, and the United Kingdom. This deferment applies to exports of technical data pursuant to any type of contract or arrangement, including licensing agreements, regardless of whether entered into before or after April 1, 1964.

(iii) The required assurance may be in the form of a letter or other written communication from the importer or, if applicable, the person in control of the distribution of the products of a plant; or the assurance may be incorporated into a licensing agreement which restricts disclosure of the technical data to use only in authorized destinations, and prohibits shipment of the direct product[24] thereof by the licensee to any unauthorized destination. An assurance included in a licensing agreement will be acceptable for all exports made during the life of the agreement. If such assurance is not received, this general license is not applicable and a validated export license is required. An application for such validated license shall include an explanatory statement setting forth the reasons why such assurance cannot be obtained.

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[21] Effective April 28, 1971, Country Group W no longer included Romania. Assurances executed prior to April 28, 1971, and referring to Country Group W continue to apply to Romania as well as Poland. Effective June 2, 1980, Hungary was added to Country Group W, which at that time included only Poland. Assurances executed prior to June 2, 1980, and referring to Country Group Y continue to apply to Hungary. Assurances executed on or after June 2, 1980 and referring to Country Group W apply to Hungary as well as Poland.

[22-23] The term "direct product" as used in this sentence and in this context only, is defined to mean the immediate product (including processes and services) produced directly by use of the technical data.

(iv) In addition, this general license is not applicable to any export of technical data of the kind described in this § 779.4(f)(2) if, at the time of export of the technical data from the United States, the exporter knows or has reason to believe that the direct product[24] to be manufactured abroad by use of the technical data is intended to be exported directly or indirectly to any unauthorized destination.

(v) The limitations set forth in this § 779.4(f)(2) do not apply to the export of—

(A) Technical data included in an application for the foreign filing of a patent provided such foreign filing of a patent application is in accordance with the regulations of the U.S. Patent Office;

(B) Technical data supporting a price quotation as described in § 779.4 (b)(2) above; and

(C) Technical data relating to those commodities listed in a Supplement to Part 777 as being under short supply control.

(3) Requirement of written assurances for entry No. 1572 on the Commodity Control List (CCL). No technical data related to CCL entry 1572A, Exceptions 2 through 4, may be exported under the provisions of this General License *GTDR* until the exporter has received written assurance from the importer that the technical data will not be shipped, either directly or indirectly, to Country Groups Q, S, W, Y or Z, or Afghanistan or the People's Republic of China. The letter of assurance requirements are stated in § 779.4(f)(1).

NOTE

A written assurance is not required for the export under this General License *GTDR* of any technical data which do not fall within the description set forth in § 779.4(f)(1) or (2) above.

(g) Restrictions Applicable to Software

Software and other technical data listed under ECCN 1391A on the Commodity Control List may be exported or reexported under General License GTDR only to Country Groups T & V, except Afghanistan and the People's Republic of China, subject to the written assurance requirements contained in § 779.4(f)(1)(i)*(K)*. Such software and technical data require a validated license for export to any other Country Group. The export or reexport of all other software and technical data listed under any other ECCN on the Commodity Control List requires a validated license to any Country Group.

(h) Restrictions Applicable to Technical Data Related to Crime Control and Detection Commodities

(1) The export of technical data related to crime control and detection instruments and equipment under General License *GTDR* is authorized *only* to Australia, Belgium, Canada, Denmark, France, the Federal Republic of Germany (including West Berlin), Greece, Iceland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Turkey, and the United Kingdom. An individual validated export license is required for the export of such technical data to any other destination, unless the export is authorized under General License *GTDA* (§ 779.3). (See § 776.14 for a list of the Commodity Control List items affected by the validated license requirement).

(i) Additional restrictions applicable to the People's Republic of China

In addition to the prohibitions in § 779.4 (c) and (d), no technical data related to commodities identified on the Commodity Control List (Supplement No. 1 to § 799.1) as controlled for reasons of national security, nuclear non-proliferation, or crime control may be exported to the People's Republic of China under General License *GTDR*. In addition, software covered by Supplement 3 to Part 779 requires a validated license for export to the PRC. These prohibitions do not apply, however, to technical data described in § 779.4(b).

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[24] The term "direct product" as used in this sentence and in this context only, is defined to mean the immediate product (including processes and services) produced directly by use of the technical data.

§ 779.5

VALIDATED LICENSE APPLICATIONS

(a) General

No technical data, other than that exportable without license to Canada or under general license to other destinations, may be exported from the United States without a validated export license. Such validated export licenses are issued by the Office of Export Licensing upon receipt of an appropriate export application or reexport request. An application for a technical data license shall consist of—

(1) Form BXA-622P, Application for Export License, accompanied by

(2) A letter of explanation described in § 779.5 (d).

(b) Application Form

Form BXA-622P shall be completed as provided in § 772.4, except that Items 9(a), 9(c) and 11 shall be left blank. In Item 9(b), "Manufacturer's Description of Commodity," enter a general statement which specifies the technical data (*e.g.*, blueprints, manuals, etc.). In addition, the words "Technical Data" shall be entered in Item 4, "Special Purpose."

(c) [*Reserved.*]

(d) Letter of Explanation.

Each application shall be supported by a comprehensive letter of explanation in duplicate. This letter shall set forth all the facts required to present to the Office of Export Licensing a complete disclosure of the transaction including, if applicable, the following—

(1) The identities of all parties to the transaction;

(2) The exact project location where the technical data will be used;

(3) The type of technical data to be exported;

(4) The form in which the export will be made;

(5) The uses for which the data will be employed;

(6) An explanation of the process, product, size, and output capacity of the equipment, if applicable, or other description that delineates, defines, and limits the data to be transmitted (the "technical scope");

(7) The availability abroad of comparable foreign technical data.

(e) Special Provisions

(1) **Maritime nuclear propulsion plants and related commodities.**[25] These special provisions are applicable to technical data relating to maritime (civil) nuclear propulsion plants, their land prototypes, and special facilities for their construction, support, or maintenance, including any machinery, device, component, or equipment specifically developed or designed for use in such plants or facilities. Every application for license to export technical data relating to any of these commodities shall include the following—

(i) A description of the foreign project for which the technical data will be furnished;

(ii) A description of the scope of the proposed services to be offered by the applicant, his consultant(s), and his subcontractor(s), including all the design data which will be disclosed;

(iii) The names, addresses and titles of all personnel of the applicant, his consultant(s) and his subcontractor(s) who will discuss or disclose the technical data or be involved in the design or development of the technical data;

(iv) The beginning and termination dates of the period of time during which the technical data will be discussed or disclosed and a proposed time schedule of the reports which the applicant will submit to the U.S. Department of Commerce, detailing the technical data discussed or disclosed during the period of the license;

(v) The following certification:

> I (We) certify that if this application is approved, I (we) and any consultants, subcontractors, or other persons employed or retained by us in connection with the project thereby licensed will not discuss with or disclose to others, directly or indirectly, any technical data relating to U.S. naval nuclear propulsion plants. I (We) further certify that I (we) will furnish to the U.S. Department of Commerce all reports and information which it may require concerning specific transmittals or disclosures of technical data pursuant to any license granted as a result of this application.

(vi) A statement of the steps which the applicant will take to assure that personnel of the applicant, his consultant(s) and his subcontractor(s) will not discuss or disclose to others technical data relating to U.S. naval nuclear propulsion plants; and

(vii) A written statement of assurance from the foreign importer that unless prior authorization is obtained from the Office of Export Licensing, the importer will not knowingly export directly or indirectly to Country Group Q, W,[26] Y, or Z, or the People's Republic of China or Afghanistan the direct product of the technical data. However, if the U.S. exporter is not able to obtain this statement from the foreign importer, the U.S. exporter shall attach an explanatory statement to his license application setting forth the reasons why such an assurance cannot be obtained.

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[25] See § 779.8(a) which sets forth provisions prohibiting exports and reexports of certain technical data and products manufactured therefrom.

[26] Effective April 26, 1971, Country Group W no longer included Romania. Assurances executed prior to April 26, 1971, and referring to Country Group W continue to apply to Romania as well as Poland. Effective June 2, 1980, Hungary was added to Country Group W, which at that time included only Poland. Assurances executed prior to June 2, 1980 and referring to Country Group Y continue to apply to Hungary. Assurances executed on or after June 2, 1980 and referring to Country Group W apply to Hungary as well as Poland.

(2) Other commodities. For all license applications to export to any destination, other than Country Group Q, W, Y, or Z, the People's Republic of China or Afghanistan, technical data relating to any of the commodities set forth below, an applicant shall attach to the license application a written statement from his foreign importer assuring that, unless prior authorization is obtained from the Office of Export Licensing, the importer will not knowingly reexport the technical data to any destination, or export the direct product of the technical data, directly or indirectly, to Country Group Q, W, Y, or Z, the People's Republic of China or Afghanistan. However, if the U.S. exporter is not able to obtain the required statement from his importer, the exporter shall attach an explanatory statement to his license application setting forth the reasons why such an assurance cannot be obtained. The special provisions set forth in this § 779.5(e)(2) are applicable to technical data concerning the following—

(i) Commodities where the exporter knows or has reason to know that the item will be used directly or indirectly, whether or not specifically designed, for developing or testing nuclear weapons or nuclear explosive devices, nuclear testing, the chemical processing of irradiated special nuclear or source material, the production of heavy water, the separation of isotopes of source and special nuclear material, or the fabrication of nuclear reactor fuel containing plutonium, as described in § 778.3, or training of personnel for any activity listed above;

(ii) Neutron generator systems, including tubes, designed for operation without an external vacuum system, and utilizing electrostatic acceleration to induce a tritium-deuterium nuclear reaction; and specially designed parts, n.e.s.;

(iii) Porous nickel;

(iv) Civil aircraft, civil aircraft equipment, parts, accessories, or components identified by the code letter "A," "B," or "M" following the Export Control Commodity Number on the Commodity Control List (Supplement No. 1 to § 799.1);

(v) Electrical and electronic instruments specially designed for testing or calibrating the airborne direction finding, navigational, and radar equipment;

(vi) Airborne electronic transmitters, receivers, and transceivers;

(vii) Airborne electronic direction finding equipment;

(viii) Airborne electronic navigation and radar equipment;

(ix) Watercraft of hydrofoil and hovercraft (air bubble) design[27];

(x) Submersible watercraft other than military or naval types[28];

(xi) Plants specially designed for the production of uranium hexafluoride (UF_6), and specially designed or prepared equipment (including UF_6 purification equipment) and specially designed parts and accessories therefor;

(xii) Inverters, converters, frequency changers, and generators having a multiphase electrical power output within the range of 600 to 2000 hertz;

(xiii) Cylindrical tubing, raw, semifabricated, or finished forms, made of aluminum alloy (7000 series) maraging steel or high-strength titanium alloys (*e.g.*, Ti-6 Al-4 V, etc.) having the following characteristics:

(A) Wall thickness of 1/2 inch, or less;

(B) Diameter of 3 inches or more;

(xiv) Cylindrical rings, or single convolution bellows, made of high-strength steels having all of the following characteristics:

(A) Tensile strength equal to or greater than 150,000 psi;

(B) Wall thickness of 3 millimeters or less; and

(C) Diameter of 3 inches or more;

(xv) Pipes, valves, fittings, heat exchangers, or magnetic, electrostatic or other collectors made of graphite or stainless steel, or of other materials coated in graphite, yttrium or yttrium compounds resistant to the heat and corrosion of uranium vapor; and

(xvi) Any other commodity under the export control jurisdiction of Export Administration if such commodity is not covered by an entry on the Commodity Control List.

(3) Computer software. Applications to export software subject to validated export licenses should provide the information detailed in § 776.10 (a)(1)(vii) and, in addition, should identify the location, origin, and model of the equipment with which the software will be used. For software, the applicant should indicate on the application the Commodity Control List Processing Code for the equipment with which the software will be used.

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[27] This commodity is not listed on the Commodity Control List since it is under the export control jurisdiction of the U.S. Maritime Administration. However, technical data relating to this commodity are under the export control jurisdiction of Export Administration.

[28] Technical data relating to military or naval submersible watercraft are subject to the export licensing authority of the U.S. Department of State. See Supplement No. 2 to Part 770.

(f) Validity Period and Extension

(1) Initial validity. Validated licenses covering exports of technical data will generally be issued for a validity period of 24 months. Upon request, a validity period exceeding 24 months may be granted where the facts of the transaction warrant it and the Office of Export Licensing determines that such action would be consistent with the objectives of the applicable U.S. export control program. Justification for a validity period exceeding 24 months should be provided in accordance with the procedures set forth in § 772.9(d)(2) for requesting an extended validity period with a license application. The Office of Export Licensing will make the final decision on what validity beyond 24 months, if any, should be authorized in each case.

(2) Extensions. A request to extend the validity period of a technical data license shall be made on Form BXA-685P in accordance with the procedures set forth in § 772.12(a). The request shall include on Form BXA-685P, in the space entitled "State specifically the way the license should read," whether the license has been previously extended and the date(s) and duration of such extension(s). The Office of Export Licensing will make the final decision on what extension beyond 24 months, if any, should be authorized in each case. (See § 779.8(c)(1) for validity period extensions for reexports of technical data.)

§ 779.6

EXPORTS UNDER A VALIDATED LICENSE

(a) Use of Validated Licenses

(1) Retention of license. The validated technical data license need not be presented to the customs office or post office but shall be retained and made available for inspection in accordance with the recordkeeping provisions of § 787.13.

(2) Return of license. Export licenses shall be returned promptly to the Office of Export Licensing upon revocation, suspension, or expiration of the validity period. Used licenses shall be returned when fully used. Unused and partially used licenses shall be returned when the exporter determines that he will not make any shipment, or any further shipment, thereunder, or upon expiration, whichever comes first.

(b) Reports on Exports

(1) Country Group S, T, or V except Afghanistan. With respect to a license used to export technical data to Country Group S, T, or V except Afghanistan when the license is returned, as provided in § 779.6(a)(2) above, the exporter shall submit a statement indicating—

(i) When the technical data were exported or when the technical services were rendered; and

(ii) Whether the export was total or partial.

(iii) For exports to the People's Republic of China, the exporter also shall submit a statement indicating the nature of the transaction (*e.g.*, a sale of technical data, performance of technical services, a technical licensing agreement, or a technology exchange agreement).

(2) Country Group Q, W, or Y or Afghanistan. With respect to a license used to export technical data to Country Group Q, W, or Y or Afghanistan, when the license is returned, as provided in § 779.6(a)(2) above, the exporter shall submit a statement indicating—

(i) When the technical data were exported or when the technical services were rendered;

(ii) Whether the export or service was total or partial;

(iii) The nature of the transaction (*e.g.*, a sale of technical data, performance of technical services, a technical licensing agreement, a technology exchange agreement);

(iv) The nature of the payment received or to be received by the U.S. exporter (*e.g.*, pecuniary or other consideration); and

(v) The actual or estimated price of the technical data exported, or services rendered, or the actual or estimated dollar value of any other consideration received or to be received. (This should include the payment received or to be received for engineering and for any other services when rendered, as well as for the royalty or other payment received or to be received for a design or process authorized to be used.)

§ 779.7

AMENDMENTS

Requests for amendments shall be made in accordance with the provisions of § 772.11. Changes requiring amendment include any expansion or upgrade of the technical scope that was described in the letter of explanation, as approved or modified on the export license.

§ 779.8

REEXPORTS OF TECHNICAL DATA AND EXPORTS OF THE PRODUCT MANUFACTURED ABROAD BY USE OF U.S. TECHNICAL DATA

(a) Prohibited Exports and Reexports

Unless specifically authorized by the Office of Export Licensing, or otherwise authorized under the provisions of § 779.8(b) below, no person in the United States or in a foreign country may—

(1) Reexport any technical data imported from the United States, directly or indirectly, in whole or in part, from the authorized country(ies) of ultimate destination;

(2) Export any technical data from the United States with the knowledge that it is to be reexported, directly or indirectly, in whole or in part, from the authorized country(ies) of ultimate destination; or

•(3) Export or reexport to Country Group Q, S, W, Y, or Z, the People's Republic of China or Afghanistan any foreign produced direct product of U.S. technical data, or any commodity produced by any plant or major component thereof which is a direct product of U.S. technical data, if such direct product or commodity is covered by the provisions of § 779.4(f) or § 779.5(e) (1) or (2).

(b) Permissive Reexports

(1) Exportable under General License *GTDA* or *GTDR*. Any technical data which have been exported from the United States may be reexported from any destination to any other destination, provided that, at the time of reexport, the technical data may be exported directly from the United States to the new country of destination under General License *GTDA* or *GTDR*, and provided that all of the requirements and conditions for use of these general licenses have been met.

(2) Country Groups Q, W, and Y and Afghanistan. When the Office of Export Licensing has specifically authorized the export of a commodity from the United States to a destination in Country Group Q, W, or Y or Afghanistan or the reexport of a U.S.-origin commodity from any foreign country to a destination in Country Group Q, W, or Y or Afghanistan, technical data such as manuals, instructional sheets, or blueprints as described in, and subject to the conditions of, § 779.4(b) (1) may be sent to the same destination as part of the same transaction without separate specific authorization by the Office of Export Licensing.

(3) COCOM Authorization. Separate specific authorization by the Office of Export Licensing to export or reexport any foreign-produced direct product of U.S. technical data is not required if *all* of the following conditions are met:

(i) The commodities being exported:

(A) Are identified by an "A" on the CCL,

(B) Are *not* included in the Advisory Notes in any entry on the Commodity Control List (Supplement No. 1 to § 799.1) (the Advisory Notes for the People's Republic of China do *not* apply in meeting this requirement),

(C) Are valued at more than $4,000 (except that commodities in CCL entries 1548, 1555, 1559, and 1781, and entries beginning with the digits 2 and 3, are eligible regardless of value), and

(D) If included in entry 1565A, have at least one parameter falling in the extreme right-hand, *i.e.* (d), column of boxes on Form BXA-6031P, Digital Computer System Parameters.

(ii) The export or reexport is from a COCOM participating country, *i.e.*, Belgium, Canada, Denmark, France, the Federal Republic of Germany, Greece, Italy, Japan, Luxembourg, The Netherlands, Norway, Portugal, Spain, Turkey, or the United Kingdom;

(iii) The export or reexport is made in accordance with the conditions of the licensing authorization issued by the applicable COCOM participating country;

(iv) The export or reexport is to a country in Country Group Q, W, or Y or the People's Republic of China; and

(v) The transaction has received unanimous approval in COCOM (see § 774.3(e)).

(4) People's Republic of China. Separate specific authorization by Export Administration is not required to reexport software from a COCOM country to the People's Republic of china if the software meets the requirements set forth in the Advisory Note for the People's Republic of China in Supplement No. 3 to Part 779 and if the license has been approved by a COCOM country.

(c) Specific Authorization To Reexport

(1) Submission of request for reexport authorization. Requests for specific authorization to reexport technical data or to export any product thereof, as applicable, shall be submitted on Form BXA-699P, Request for Reexport Authorization, to:

Office of Export Licensing
P.O. Box 273
Washington, D.C. 20044.

(See Supplement No. 1 to Part 774 for instructions on completing the form.) If Form BXA-699P is not readily available, a request for specific authorization to reexport technical data or to export any product thereof, as applicable, may be submitted by letter. The letter shall bear the words "Technical Data Reexport Request" immediately below the heading or letterhead and contain all the information required by § 779.5(d). Authorization to reexport technical data or to export the product thereof, if granted, will generally be issued with a validity period of 24 months on Form BXA-699P, or by means of a letter from the Office of Export Licensing.

Any request for extension of the validity period shall be requested in accordance with § 774.5(b), and shall specify the period for which additional validity is required. The Office of Export Licensing will make the final decision on what validity beyond 24 months, if any, should be authorized in each case.

(2) Return of reexport authorization. Reexport authorizations shall be returned promptly to the Office of Export Licensing upon revocation, suspension, or expiration of the validity period. Used authorizations shall be returned when fully used. Unused and partially used authorizations shall be returned when the person authorized to reexport determines that he will not make any shipment, or further shipment, thereunder, or upon expiration of the authorization, whichever comes first. After the reexport of the technical data has been completed, the Office of Export Licensing shall also be given a notice in writing indicating—

(i) When the technical data were reexported or when the technical services were rendered; and

(ii) Whether the reexport or service was total or partial.

(iii) For exports to the People's Republic of China, a notice also is required indicating the nature of the transaction (*e.g.*, a sale of technical data, performance of technical services, a technical licensing agreement, a technology exchange agreement, or the rendering of technical services).

(3) Reexports to Country Group Q, W, or Y or Afghanistan. In addition, if the technical data had been reexported to Country Group Q, W, or Y or Afghanistan, the written notice shall specify—

(i) The nature of the transaction *e.g.*, a sale of technical data, performance of technical services, a technical licensing agreement, a technology exchange agreement, or the rendering of technical services);

(ii) The nature of the payment received, or to be received, by the U.S. exporter (*e.g.*, pecuniary or other consideration); and

(iii) The actual or estimated price of the technical data reexported or services rendered, or the actual or estimated dollar value of any other consideration received or to be received. (This should include the payment received or to be received for engineering and for any other services when rendered, as well as for the royalty or other payment received or to be received for a design or process authorized to be used.)

(d) Effect of Foreign Laws

No authority granted by the U.S. Office of Export Licensing, or under the provisions of the U.S. Export Administration Regulations, to reexport technical data or export a product thereof shall in any way relieve any person from his responsibility to comply fully with the laws, rules, and regulations of the country from which the reexport or export is to be made or of any other country having authority over any phase of the transaction. Conversely, no foreign law, rule, regulation, or authorization in any way relieves any person from his responsibility to obtain such authorization from the U.S. Office of Export Licensing as may be required by the U.S. Export Administration Regulations.

§ 779.9

COMMERCIAL AGREEMENTS WITH CERTAIN COUNTRIES

Pursuant to section 5(j) of the Export Administration Amendments Act of 1979, as amended, any non-governmental U.S. person or firm that enters into an agreement with any agency of the government of a controlled country (Country Groups Q, W, Y, and the People's Republic of China), which agreement encourages technical cooperation and is intended to result in the export from the U.S. to the other party of U.S.-origin technical data (except under General License GTDA or General license GTDR as provided under the provisions of § 779.4(b)(1) and (2) of this part), shall submit those portions of the agreement that include the statement of work and describe the anticipated exports of data to the Office of Technology and Policy

Analysis, Room 4054, P.O. Box 273, Washington, D.C. 20044. This material shall be submitted no later than 30 days after the final signature on the agreement.

(a) This requirement does not apply to colleges, universities and other educational institutions.

(b) The submission required by this section does not relieve the exporter from the licensing requirements for controlled technical data and goods.

(c) Acceptance of a submission does not represent a judgment as to whether Export Administration will or will not issue any authorization for export of technical data.

§ 779.10

OTHER APPLICABLE PROVISIONS

As far as may be consistent with the provisions of this Part 779, all of the other provisions of the Export Administration Regulations shall apply equally to exports of technical data and to applications for licenses and licenses issued under this part.

TECHNICAL DATA INTERPRETATIONS

1. Technology Based on U.S.-Origin Technical Data

U.S.-origin technical data does not lose its U.S.-origin when it is redrawn, used, consulted, or otherwise commingled abroad in any respect with other technical data of any other origin. Therefore, any subsequent or similar technical data prepared or engineered abroad for the design, construction, operation, or maintenance of any plant or equipment, or part thereof, which is based on or utilizes any U.S.-origin technical data, is subject to the same U.S. Export Administration Regulations that are applicable to the original U.S.-origin technical data, including the requirement for obtaining Office of Export Licensing authorization prior to reexportation.

2. Distinction Between General and Validated License Requirements for Shipment to QWY Destinations of Technical Data and Replacement Parts

A number of exporters have recently asked where the line is drawn between general license and validated license exports to QWY destinations of technical data related to equipment exports.

The export of technical data under validated license is authorized only to the extent specifically indicated on the face of the license. The only data related to equipment exports that can be provided under general license is the publicly available data authorized by General License *GTDA*, or the assembly, installation, maintenance, repair, and operation data authorized by General License *GTDR*.

The following questions and answers are intended to further clarify this matter as well as related problems involving other general licenses. These are clarifications only. Their issuance in no way affects the suspension of validated licenses for exports to the U.S.S.R. of January 11, 1980 (45 FR 3027).

Question A:

Can we send technicians to repair equipment even though we can no longer supply parts due to suspension or revocation of our validated export license?

Answer:

You can make repairs only to the extent the technical know-how utilized by the technicians does not exceed that contained in the manuals and instructions provided with the equipment under *GTDR*. Under *GTDR*, the technical data must be transmitted within one year of shipment of the equipment. Once the *GTDR* data is transmitted, subsequent service visits can be made at any time and are not restricted to the first year after shipment, but the services performed must be based solely on the data provided under *GTDR*.

Question B:

Must we continue to fulfill visitation and reporting requirements imposed by our suspended (or revoked) validated export licenses even though we can no longer provide parts for repairs we have normally made during these visits?

Answer:

Every effort must be made to continue visitations. If your technicians are not permitted to visit the site or are otherwise prevented from fulfilling your visitation and reporting obligations, you should present evidence of this with your visitation report.

Question C:

We have completed a plant, fully utilizing the licenses we were issued for technical data and equipment. For contractual and warranty reasons, our technicians remain on site. Can they continue to assist and advise the customer even though we no longer have a valid export license?

Answer:

They may advise and assist, but only to the extent permitted by *GTDA* or *GTDR*. If the consignee has been furnished information on installation, operation, maintenance, or repair of equipment, your technicians can repeat that information or perform the needed work, provided they do not exceed the *GTDR* limitations. Your technicians can, for instance, monitor the operation of machines to assure that they are not misused in any way that could result in unfounded warranty claims and possible arbitration. However, your personnel may not perform plant operations or repair functions utilizing technical data requiring a validated license.

Question D:

We have been setting up a turnkey plant. The equipment is there but needs to be installed. Can we install the machines and teach the customer how to run them even though our license has been suspended (or revoked)?

Answer:

Individual machines may be installed and put into operating order, but only to the extent permitted by *GTDR*. Instruction or assistance in combining the individual machines to perform the process for which the plant was intended, however, is not covered by the general license and this service cannot be performed while the requisite validated license for technical data is suspended.

In determining what constitutes an individual machine, exporters should consider as separate machines each of the basic pieces of equipment that join to provide a manufacturing process, but need not separate items such as machine tool/controller combinations or computer mainframe/peripheral systems designed and sold as functional units.

Question E:

If a validated export license is suspended, can a U.S. manufacturer have its field technicians install a product that was exported prior to the suspension?

Answer:

If installation of the product involves no more knowledge than could be absorbed by a competent technician from manuals, instructions, and drawings that normally are delivered with the product under *GTDR* (*i.e.*, necessary for assembly, installation, maintenance, repair, or operation) then the manufacturer's field technicians may install the product. If the field engineers would have to exceed this limitation to install the equipment, then they may not do so. In no case can the field engineers go beyond installation of individual machines to reveal how machines relate to each other to perform a manufacturing process, since process technology is subject to validated license.

Question F:

We applied for a license to export equipment, received a license, and shipped. Subsequently, all validated licenses for that destination were suspended. In our formal application, we described a list of activities that would be required to complete this consolidated business transaction, such as—

—Detailed training schedule for the customer's technical personnel, for maintenance and operation of the equipment;

—Direct support by our engineers for a period of several years to assure proper procedures and use of the equipment;

—A contract for back-up maintenance and repair for equipment, until the customer's engineers gained sufficient experience to handle the job; and

—A contract for study and analysis and design of their total plant (or a particular department) equipment requirements.

When we got the license for the export of equipment we understood that the license covered the total transaction and permitted the undertaking of the various ancilliary activities as represented in our application.

We have just started these activities, and are obliged under our contract to continue performance even though the license is suspended.

How does the suspension order affect our continued performance, where the equipment is already at the customer's facility waiting for our engineers to begin work and also train the customer's personnel?

Answer:

In the situation you describe, it is not entirely clear how much of your work performance and training is covered by the suspension of your license. It seems likely that a good portion of the work should have been subject to a separate validated technical data license, which would be subject to the general suspension of validated licenses. As you did not approach the transaction (from a licensing procedure viewpoint) in this manner, we will need to review the case to determine what activities are directly related to the provision of technical data under *GTDR* (*i.e.*, required for installation, assembly, maintenance, repair, and operation of the equipment shipped) and which activities go beyond this definition and will require a separate technical data approval for you to continue work.

Question G:

Our engineers sometimes provide technical advice on repair situations by telephone from a Western country to the customer in a country where our validated licenses have been suspended (or revoked). This is particularly likely to occur in difficult situations where the customer will describe his problem in technical detail to our engineer, and our engineer tells him, based on experience and access to more complete equipment history information, where to look for the error. This is an exchange of information, where we also gain knowledge of specific problems with the equipment.

Can this procedure be viewed as *GTDR* information necessary for the repair of installed equipment?

Answer:

This is a reasonable activity that may be covered by *GTDR*, subject to the restriction that it may not involve technical information beyond the scope provided in the manuals and instructions originally given to the customer: *i.e.*, the exchange of information must have as its base of reference the knowledge as provided in those manuals and instructions. The exchange may not, for example, go into detail of component design for engineering of a specific standard part, where the manual does not provide such technical detail.

Provision of such advice may be made at any time, provided it is based solely on *GTDR* information that was furnished within one year of the equipment export.

The above clarification would not only apply to a telephone call from a Western country, but would also be applicable for on-site service calls where the engineer is at the customer location.

Question H:

Our customer installation in a country where our validated licenses have been suspended (or revoked) uses certain standard computer programs shipped some time ago under validated license. The customer normally receives a programming service under warranty-type contract provisions to receive error corrections for these programs. When he has a problem, he identifies it to us (often via a magnetic tape) and a correction (revised program instruction) is sent back to the customer. This exchange is usually mutually advantageous, as we gain from customer experiences and he receives assistance in "fixing" his problem.

Can these exchanges be made under a general license? Can periodic updates (consolidated correction of errors) be provided to the customer?

Answer:

Provided this is routine error correction with no new facilities or performance enhancements provided above the original program specifications, it can be provided either under *GLR* (*e.g.*, a "faulty" tape sent to the U.S. and corrected tape sent back to the customer), or under *GTDR*. These general licenses are available only for one year following export of the equipment, unless extended by the Office of Export Licensing.

Question I:

We are required by our contract to provide for our equipment installed in a country where our validated licenses have been suspended (or revoked), even after warranty period, engineering changes based on continuing experience with and improvements to that equipment. These changes are for the purpose of, *e.g.*, assuring operation of the machines to the original equipment specifications, removing a particular error-prone condition, or in some cases for the safety of user or maintenance personnel. The transfer of technical data and in some instances new or exchange parts are involved. We consider some of these changes "mandatory" where safety is concerned.

Can we provide the technical data for this purpose under *GTDR* if extended beyond the one year limitation period, and can the requisite parts be provided under *GLR* provisions, where there is no charge to the customer?

Answer:

This technical data may be exported provided it does not exceed the limitations of *GTDR*. However, formal waiver of the one-year limitation must be obtained where such continued shipments are foreseen.

The provision of parts under *GLR* is restricted to warranty situations within one year of export. "Mandatory changes" provided under warranty at no charge are considered an appropriate use of *GLR*. We would consider waiving the one-year limit for export of parts under *GLR* based on the merits of the individual case.

To request extension of the time limit under *GTDR* or *GLR*, the applicant should submit a letter, in duplicate, to the Director, Office of Export Licensing, Export Administration, P.O. Box 273, U.S. Department of Commerce, Washington, D.C. 20044. The letter should specify the export license number, the date of export of the equipment, the reason the extension is needed, whether *GTDR*, *GLR*, or both should be extended, and the period of time for which the extension is desired. Extensions may not exceed one year, but further extensions may be sought if necessary. If approved, OEL will validate the copy of the letter and return it to the applicant.

Question J:

Our engineers, in installing or repairing equipment, use techniques (experience as well as proprietary knowledge of the internal componentry or specifications of the equipment) that exceed what is provided in the standard manuals or instructions (including training) given to the customer. In some cases, it is also a condition of the license that such information provided to the customer be constrained to the minimum necessary for normal installation, maintenance and operation situations.

Can we send an engineer (with knowledge and experience) to the customer site to perform the installation or repair, under the provisions of *GTDR*, if it is understood that he is restricted by our normal business practices to performing the work without imparting the knowledge or technical data to the customer personnel?

Answer:

As defined in § 779.1, export of technical data includes release of U.S.-origin data in a foreign country, and "release" includes "application to situations abroad of personal knowledge or technical experience acquired in the United States." As the release of technical data in the circumstances described here would exceed that permitted under *GTDR*, a validated export license would be required even though the technician could apply the data without disclosing it to the customer.

Question K:

We shipped equipment prior to the suspension (or revocation) of our validated licenses, and had planned according to our normal business practices to train customer engineers to maintain that equipment. The training is contractual in nature, provided for a fee, and is scheduled to take place in part in the customer's facility and in part in the U.S. Can we now proceed with this training at both locations under general license authority?

Answer:

Provided that this is your normal training, and involves technical data contained in your manuals and standard instructions for the exported equipment, and meets the other requirements of § 779.4, the training may be provided within the limits of General License *GTDR*. The location of the training is not significant, as the export occurs at the time and place of the actual transfer or imparting of the technical data to the customer's engineers.

Any training beyond that covered in the *GTDR* provisions, but specifically represented in your license application as required for this customer installation, and in fact authorized on the face of the license or a separate technical data license, may not be undertaken while the validated license is suspended or revoked.

Question L:

We have contracted with our customer to provide a "customized" service for a fee (*i.e.*, write a program or an instruction manual for a specific customer requirement), and this was described in detail in our equipment export application. When we received our equipment export license under which we completed shipment and installation, we assumed that this work could commence, being directly related to the equipment and identified by us as necessary for the operation of that equipment for the specific customer.

Can we continue this work, which is already started, or is this impacted by the suspension of our equipment license?

Answer:

In the case you have outlined, a separate validated license is required to cover technical data involved in such "specialized, custom service", unless the equipment validated license clearly specifies on its face that it covers the technical data. In any event, if all validated licenses are suspended to your customer's country the work must cease as it cannot be carried out under general license.

Question M:

In most cases, we ship parts under validated licenses. However, the Regulations do provide for parts shipments for warranty repair situations under the *GLR* provisions of § 771.17.

If our validated licenses are suspended or revoked, is it permissible to change our previous license procedure and to ship parts on a one-for-one replacement basis where the equipment and parts are under manufacturer's warranty?

Answer:

It is permissible to use any general license (*G-DEST*, *GLR*, etc.) that may apply to a given shipment.

Question N:

We have shipped equipment to our customer prior to suspension or revocation of our validated licenses, and have scheduled some management consultation with the customer relating to installation and operational planning, organization, and scheduling of the utilization of the exported equipment. The consultations may include meetings with the customer's management, discussion of specific problems, provision of generally available brochures or basic technical manuals, conducting introductory level training for the operations and support staff, etc.

These consultations, meetings, seminars, training sessions, and manuals are provided consistent with our standard business practices at no additional charge to customers, and are for the purpose of advising all customers of the basic management and organizational techniques involved in utilization of the equipment.

We have previously considered the level of technical data involved as generally available *GTDA* or *GTDR*, without drawing much precise distinction. Do we need a validated license?

Answer:

Generally available published technical data may be provided under *GTDA*. Also, the provision of manuals and instructions beyond the definition of *GTDA* is permissible under *GTDR*, provided that such manuals and instructions are directly required for the installation, assembly, maintenance, repair, or operation of the exported equipment. A seminar, training course, or consultation with the customer based on and restricted to the contents of such *GTDA* or *GTDR* manuals, instructions, and materials would be governed by the provisions of these general licenses.

Also, it is recognized that dialogue with the customer involves transfer of technical data, often of a general nature. In such consultations or dialogues (in the context of training sessions, seminars, and working meetings), it is necessary to limit the content of these exchanges to identifiable published material (*GTDA*), or the manuals and instructions provided together with the equipment under *GTDR*.

Guidance from OEL should be obtained whenever you are in doubt. Where it is determined necessary by OEL, technical data license applications should be filed for situations where technical data exchange may exceed that clearly within the restrictions of *GTDR*.

Question O:

We have shipped computer equipment prior to the suspension or revocation of our validated licenses, but have not yet delivered the basic computer control programs (systems control software) required for the operation of the equipment.

Can we ship these programs, and assist the customer in getting them properly installed and operational?

Answer:

Computer software that is not generally available as defined in General License *GTDA* requires a validated license for export, and thus may not be shipped in these circumstances. However, computer software that is both essential for operation of the system and specific to the application for which the system was licensed may be exported under the provisions of *GTDR*. This would include also the manuals or instructions necessary for the installation of such software. Assistance by your personnel in installation or use of *GTDA* or *GTDR* software is limited to the utilization of the materials provided to the customer and within the standard specifications of the software provided.

Additional training or instruction beyond the standard provisions would be subject to validated license.

Updates (error correction or software warranty services) to the original installed software are permissible under *GTDR*, provided that there is no enhancement of performance.

COMMODITIES SUBJECT TO REPUBLIC OF SOUTH AFRICA AND NAMIBIA EMBARGO POLICY

(See § 779.4(e) and § 785.4(a))

(1) Spindle assemblies, consisting of spindles and bearings as a minimal assembly, *except those assemblies with axial and radial axis motion measured along the spindle axis in one revolution of the spindle equal to or greater (coarser) than the following: (a) 0.0008 mm TIR (peak-to-peak) for lathes and turning machines; or (b) D x 2 x* 10^{-5} *mm TIR (peak-to-peak) where D is the spindle diameter in millimeters for milling machines, boring mills, jig grinders, and machining centers* (ECCN 1093);

(2) Equipment for the production of military explosives and solid propellants, as follows:

(a) Complete installations; and

(b) Specialized components (for example, dehydration presses; extrusion presses for the extrusion of small arms, cannon and rocket propellants; cutting machines for the sizing of extruded propellants; sweetie barrels (tumblers) 6 feet and over in diameter and having over 500 pounds product capacity; and continuous mixers for solid propellants) (ECCN 1118);

(3) Specialized machinery, equipment, gear, and specially designed parts and accessories therefor, specially designed for the examination, manufacture, testing, and checking of the arms, appliances, machines, and implements of war (ECCN 2018), ammunition hand-loading equipment for both cartridges and shotgun shells, and equipment specially designed for manufacturing shotgun shells (ECCN 5399).

(4) Construction equipment built to military specifications, specially designed for airborne transport (ECCN No. 2317);

(5) Vehicles specially designed for military purposes, as follows:

(a) Specially designed military vehicles, excluding vehicles listed in Supplement No. 2 to Part 770 (ECCN 2406);

(b) Pneumatic tire casings (*excluding tractor and farm implement types*), of a kind specially constructed to be bulletproof or to run when deflated (ECCN 2406);

(c) Engines for the propulsion of the vehicles enumerated above, specially designed or essentially modified for military use (ECCN 2406); and

(d) Specially designed components and parts to the foregoing (ECCN 2406);

(6) Pressure refuellers, pressure refuelling equipment, and equipment specially designed to facilitate operations in confined areas and ground equipment, not elsewhere specified, developed specially for aircraft and helicopters, and specially designed parts and accessories, n.e.s. (ECCN 2410);

(7) Specifically designed components and parts for ammunition, *except cartridge cases, powder bags, bullets, jackets, cores, shells, projectiles, boosters, fuses and components, primers, and other detonating devices and ammunition belting and linking machines* (ECCN 2603);

(8) Nonmilitary shotguns, barrel length 18 inches or over; and nonmilitary arms, discharge type (for example, stun-guns, shock batons, etc.), *except arms designed solely for signal, flare, or saluting use;* and parts, n.e.s. (ECCN 5998);

(9) Shotgun shells, and parts (ECCN 6998);

(10) Military parachutes (ECCN 2410A);

(11) Submarine and torpedo nets (ECCN 2409A);

(12) Bayonets and muzzle-loading (black powder) firearms (ECCN 2901A).

COMPUTER SOFTWARE

Software described in this Supplement is subject to the written assurance requirements of § 779.4(f)(1)(i)(a) and requires an individual validated license for export to Country Groups QSWYZ, the People's Republic of China, and Afghanistan. Also see § 779.4(e) for written assurance and validated license requirements for exports to South Africa and Namibia.

Technical Notes:

1. "Software" is defined as follows:

"Software"—A collection of one or more "programs" or "microprograms" fixed in any tangible medium of expression.

"Program"—A sequence of instructions to carry out a process in, or convertible into, a form executable by an electronic computer.

"Microprogram"—A sequence of elementary instructions, maintained in a special storage, the execution of which is initiated by the introduction of its reference instruction into an instruction register.

2. "Software" is categorized as follows (there is a close relationship and possible overlap among these categories):

"Development system"—"Software" to develop or produce "software". This includes "software" to manage those activities. Examples of a "development system" are programming support environments, software development environments, and programmer productivity aids.

"Software" to convert a convenient expression of one or more processes ("source code" or "source language") into equipment executable form ("object code" or "object language").

"Diagnostic system"—

"Software" to isolate or direct "software" or equipment malfunctions.

"Maintenance system"—

"Software" to:

(a) Modify "software" or its associated documentation in order to correct faults, or for other updating purposes; or

(b) "Maintain" equipment;

"Operating system"—

"Software" to control:

(a) The operation of a "digital computer" or of "related equipment"; or

(b) The loading or execution of "programs".

"Application software"—

"Software" not falling within any of the definitions of the other categories of "software".

3. "Specifically designed software" is defined as:

The minimum "operating systems", "diagnostic systems", "maintenance systems" and "application software" necessary to be executed on a particular equipment to perform the function for which it was designed. To make other incompatible equipment perform the same function requires:

(a) Modification of this "software"; or

(b) Addition of "programs".

(For a complete list of definitions of terms used in this Supplement, see Advisory Note 12 below; see also ECCN 1565 for additional definitions relating to electronic computers.)

List of Software Subject To This Supplement to Part 779

(a) "Software" of whatever category, as follows:

(1) "Software" designed or modified for any computer that is part of a computer series designed and produced within Country Groups, Q, W, Y, or Z, the People's Republic of China, or Afghanistan: except "application software" designed for and limited to:

(i) Accounting, general ledger, inventory control, payroll, accounts receivable, personnel records, wages calculation or invoice control;

(ii) Data and text manipulation such as sort/merge, text editing, data entry or word processing;

(iii) Data retrieval from established data files for purposes of report generation or inquiry for the functions described in (i) or (ii) above; or

(iv) The non "real time processing" of pollution sensor data at fixed sites or in civil vehicles for civil environmental monitoring purposes;

(2) "Software" designed or modified for the design, development or production of items controlled by ECCNs on the Commodity Control List identified by the code letter "A", by the International Traffic in Arms Regulations, by 10 CFR 110 or by 10 CFR 810;

(3) "Software" designed or modified for:

(i) Controlled "hybrid computers";

•(ii) One or more of the functions described in ECCN 1565(h)(1)(i)(A) to (J) and (M) or (h)(2)(vi) or for "digital computers" or "related equipment" designed or modified for such functions, *except* the minimum "specially designed software" in machine executable form for "digital computers" and "related equipment" therefor that are freed from controls only by ECCN 1565(h)(2)(i) or (iii), and only when supplied with the equipment or systems;

(4) "Software" for computer-aided design, manufacture, inspection or test of items controlled by ECCNs on the Commodity Control List identified by the code letter "A", by the International Traffic in Arms Regulations, by 10 CFR 110 or by 10 CFR 810;

(5) "Software" designed or modified to provide certifiable multi-level security or certifiable user isolation applicable to government classified material or to applications requiring an equivalent level of security, or "software" to certify such "software"[1];

(b) Categorized "software", as follows:

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[1] Department of Defense certifiable under section (b)(3) of "Department of Defense Trusted Computer System Evaluation Criteria", published in DOD Computer Security Center, Fort Meade, MD 20755.

(1) "Development systems":

(i) "Development systems" employing "high-level language" and designed for or containing "programs" or "databases" special to the development or production of:

(A) "Specially designed software" controlled by ECCNs on the Commodity Control List identified by the code letter "A", by the International Traffic in Arms Regulations, by 10 CFR 110 or by 10 CFR 810;

(B) "Software" controlled by sub-paragraphs (a)(2) or (a)(3) of this Supplement, including any subset designed or modified for use as part of such a "development system";

(ii) "Development systems" employing "high-level language" designed for, or containing the "software" tools and "databases" for, the development or production of "software", or any subset designed or modified for use as part of a "development system" such as or equivalent to:

(A) Ada Programming Support Environment (APSE);

(B) Any subset of APSE, as follows:
(1) Kernel APSE;
(2) Minimal APSE;
(3) Ada compilers specially designed as an integrated subset of APSE; or
(4) Any other subset of APSE;

(C) Any superset of APSE; or

(D) Any derivative of APSE;

(2) "Programming systems";

(i) "Cross-hosted" compilers and "cross-hosted" assemblers;

Note: For "cross-hosted" compilers or "cross-hosted" assemblers that have to be used in conjunction with microprocessor or microcomputer development instruments or systems described in ECCN 1529A, see that ECCN.

(ii) Compilers or interpreters designed or Modified for use as part of a "development system" controlled by subparagraph (b)(1) above;

(iii) Disassemblers, decompilers or other "software" that convert "programs" in object or assembly language into a higher level language, except simple debugging "application software", such as mapping, tracing, checkpoint/restart, breakpoint, dumping and the display of the storage contents or their assembly language equivalent;

(3) "Diagnostic systems" or "maintenance systems" designed or modified for use as part of a "development system" controlled by sub-paragraph (b)(i) above;

(4) "Operating systems":

(i) "Operating systems" designed or modified for "digital computers" or "related equipment" exceeding any of the following limits:

(A) Central processing unit—"main storage" combinations:
(1) "Total processing data rate"—48 million bit per second;
(2) "Total connected capacity" of "main storage"—25.2 million bit;
(3) "Virtual storage" capability—512 M Byte;

(B) Input-output control unit-drum, disk or cartridge-type streamer tape drive combinations:
(1) "Total transfer rate"—15 million bit per second;
(2) "Total access rate"—320 access per second;
(3) Total connected "net capacity"—7,000 million bit;
(4) "Maximum bit transfer rate" of any drum or disk drive—10.3 million bit per second;

(C) Input/output control unit-bubble memory combinations: Total connected "net capacity"—2.1 million bit;

(D) Input/output control unit—magnetic tape drive combinations:
(1) "Total transfer rate"—5.2 million bit per second;
(2) Number of magnetic tape drives—twelve;
(3) "Maximum bit transfer rate" of any magnetic tape drive—2.6 million bit per second;
(4) "Maximum bit packing density"—63 bit per mm. (1,600 bit per inch) per track;
(5) Maximum tape read/write speed—508 cm. (200 inch) per second;

Note: This sub-paragraph does not control "operating systems" designed or modified for "digital computers" or "related equipment":

(a) Not exceeding the above limits even when the "operating systems" can also be used on "digital computers" or "related equipment" exceeding the above limits; or

(b) Belonging to a series containing models exceeding the above limits, if the "operating systems" are used on "digital computers" or "related equipment" of the series that do not exceed the above limits.

(ii) "Operating systems" providing online transaction data processing that permit integrated teleprocessing and "on-line updating" of "databases";

(5) "Application software";

(i) "Software" for cryptologic or cryptanalytic applications;

(ii) Artificial intelligence "software", including "software" normally classified as expert systems, that enables a "digital computer" to perform functions normally associated with human perception and reasoning or learning;

(iii) "Database management systems" designed to handle "distributed databases" for

(A) Fault tolerance by using techniques such as maintenance of duplicated "databases"; or

(B) Integrating data at a single site from independent remote "databases";

(iv) "Software" designed to adapt "software" resident on one "digital computer" for use on another "digital computer", except "software" to adapt between two legally exported machines.

(c) "Specially designed software" for equipment, as follows:

(1) Navigation and direction finding equipment controlled under ECCN 1501A(b);

(2) Radar equipment controlled under ECCN 1501A(c);

(3) Equipment controlled under ECCN 1502A;

(4) Equipment controlled under ECCN 1510A;

(5) Equipment controlled under ECCN 1516A;

(6) Equipment controlled under ECCN 1519A;

(7) Equipment controlled under ECCN 1520A;

(8) Equipment controlled under ECCN 1567A;

(9) Equipment controlled under ECCN 1529A;

(10) Equipment controlled under ECCN 1533A;

(d) "Specially designed software" for the following:

(1) Technical data described in Supplement No. 4 to Part 779 for metal-working manufacturing processes;

(2) Spin-forming and flow-forming machines controlled under ECCN 1075A;

(3) Equipment, tooling and fixtures controlled under ECCN 1080A for the manufacturing or measuring of gas turbine blades or vanes;

(4) Equipment, tools, dies, molds and fixtures controlled under ECCN 1081A for the manufacture or inspection of aircraft, airframe structures, or aircraft fasteners;

(5) Equipment, tools, dies, molds, fixtures and gauges controlled under ECCN 1086A for the manufacture or inspection of aircraft and aircraft-derived gas turbine engines;

(6) Electric vacuum furnaces controlled under ECCN 1203A;

(7) Electric arc devices controlled under ECCN 1206A;

(8) Metal rolling mills controlled under ECCN 1305A;

(9) Isostatic presses controlled under ECCN 1312A;

(10) Equipment controlled under ECCN 1354A for the manufacture or testing of printed circuit boards;

(11) Equipment controlled under ECCN 1357A for the production of fibers controlled by ECCN 1763A, or their composites;

(12) Equipment controlled under ECCN 1358A for the manufacture or testing of devices and assemblies controlled under ECCN 1588A and ECCN 1572A;

(13) Test facilities and equipment controlled under ECCN 1361A for the design or development of aircraft or gas turbine aero-engines;

(14) Water tunnel equipment controlled under ECCN 1363A, including software that contains databases generated by the use of equipment controlled under that ECCN;

(15) Equipment controlled under ECCN 1365A specially designed for in-service monitoring of acoustic emissions in airborne vehicles or underwater vehicles;

(16) Machine tools controlled under ECCN 1370A for generating optical quality surfaces;

(17) Computer-controlled pumping and flooding systems that will permit the docking of listing vessels when used with floating docks controlled under ECCN 1425A;

(18) Design and production of aircraft and helicopter airframes and propulsion systems controlled under ECCN 1460A;

(19) Integration software for integrated flight instrument systems, automatic pilots, inertial or other equipment using accelerometers or gyros controlled under ECCN 1485A;

(20) Marine or terrestrial acoustic or ultrasonic systems or equipment controlled under ECCN 1510A; and

(21) Precision linear and angular measuring systems controlled under ECCN 1532A.

Advisory Notes

Advisory Note 1: Reserved.

Advisory Note 2: Reserved.

Advisory Note 3: Licenses are likely to be approved for export to satisfactory end-users in Country Groups QWY, the People's Republic of China (PRC) and Afghanistan of "software" initially exported to those destinations before January 1, 1984, provided that:

(a) The "software" is identical to and in the same language form (source or object) as initially exported, allowing minor updates for the correction of errors that do not modify the initially exported functions;

(b) The accompanying documentation does not exceed the level of the initial export;

(c) The "software" is exported to the same controlled destination as the initial export.

Advisory Note 4: Licenses are likely to be approved for export to satisfactory end-users in Country Groups QWY, the People's Republic of China (PRC) and Afghanistan of "application software" controlled by sub-paragraph (a)(1) above, but not otherwise listed in this Supplement or ECCNs on the Commodity Control List identified by the code letter "A", provided that:

(a) The "application software" is designed for and limited to the following:

(1) The approved end-use of legally exported equipment or systems in conjunction with any computer that is part of a computer series produced within a controlled area and based on a design originating in a COCOM country; or

(2) The monitoring and control of industrial processes limited to the production of items not described by ECCNs on the Commodity Control List identified by the code letter "A", by the International Traffic in Arms Regulations, by 10 CFR 110 or by 10 CFR 810; and

(b) No restricted technical data is provided.

Advisory Note 5: Licenses are likely to be approved for export to satisfactory end-users in Country Groups QWY, the People's Republic of China (PRC) and Afghanistan of "software" not exceeding 5,000 statements in "source language", excluding data, provided that:

(a) The "software" is neither designed nor modified for use as a module of a larger "software" module or system that in total exceeds this limit;

(b) The "software" is not controlled by sub-paragraph (b)(5) above; and

(c) The Office of Export Licensing is reasonably satisfied that:

(1) The "software" will be used primarily for the specific non-strategic application for which the export would be approved;

(2) The type and characteristics of such "software" are reasonable for this application; and

(3) The "software" will not be used for the design, development or production of items controlled by ECCNs on the Commodity Control List identified by the code letter "A", by the International Traffic in Arms Regulations, by 10 CFR 110 or by 10 CFR 810.

Advisory Note 6: Reserved.

Advisory Note 7: Reserved.

Advisory Note 8: Licenses are likely to be approved for export to satisfactory end-users in Country Groups QWY, the People's Republic of China (PRC) and Afghanistan of normal commercial "software" for civil Air Traffic Control (ATC) systems approved for export, provided that:

(a) The "software" is commonly used by civil Air Traffic Control authorities outside controlled areas, but not precluding the personalization of certain parameters for civil Air Traffic Control authorities wherever located;

(b) The "software" is not designed or modified for any "digital computer" that is part of a "digital computer" series designed and produced within a controlled area;

(c) The "software" is the minimum necessary to accomplish the normal civil Air Traffic Control functions outside controlled areas;

(d) The "software" will not contain or be capable of accomplishing any of the following functions:

(1) Electronic Counter Counter Measures (ECCM);

(2) Weapon display, allocation or operation;

(3) Intercept guiding capability; or

(4) Interfacing with altitude determining radars, except secondary search radars;

(e) The "software" is further limited by the amount of "source code", which is to be the minimum necessary for the use (*i.e.*, installation, operation and maintenance) of the "software";

(f) In addition to the above limitations, the only other system "software" allowed is the minimum "programming system" for the maintenance of the "software";

(g) A signed statement of the end-user or importing agency containing a full description of the "software" and its characteristics vis-a-vis the sub-paragraph above, its intended application and workload and a complete identification of all end-users and their activities is provided;

(h) The "software" will not be used to provide or process data associated with military control centers or military radars or otherwise be associated with such radars or centers; and

(i) The type and characteristics of the "software" are reasonable for the specific civil Air Traffic Control applications.

Advisory Note 9: Licenses are likely to be approved for export to satisfactory end-users in Country Group QWY, the People's Republic of China (PRC) and Afghanistan of "operating systems" controlled only by sub-paragraph (b)(4)(ii) above when supplied with "digital computer" and "related equipment" exported under the provisions of ECCN 1565, **Advisory Notes** 9 and 12, provided that these "operating systems" are:

(a) For use with a "digital computer" exported under the provisions of ECCN 1565;

(b) In machine executable version;

(c) Limited to the minimum "standard commercially available" "software"; and

(d) Not designed or modified for "database management systems" controlled by sub-paragraph (b)(5)(iii) above.

•**Advisory Note 10:** Licenses are likely to be approved for export to satisfactory end-users in Country Group QWY, the People's Republic of China (PRC) and Afghanistan of "software" controlled by sub-paragraph (a)(3)(ii) above the "digital computers" and "related equipment" exported under the provisions of ECCN 1533, **Advisory Note** 6, or ECCN 1565, **Advisory Notes** 5 and 9, provided that:

(a) The "software" is limited to:

(1) The minimum necessary for the approved application;

(2) Machine executable form; and

(3) "Specially designed software" for

(i) Equipment likely to be approved for export solely under ECCN 1533, **Advisory Note** 6;

(ii) Equipment likely to be approved for export under ECCN 1565, **Advisory Note** 5, for one or more of the functions described in ECCN 1565(h)(1)(i)(A), (B), or (D);

(iii) Equipment likely to be approved for export under ECCN 1565, **Advisory Note** 9, for one or more of the functions described in ECCN 1565(h)(1)(i)(A), (B), or (C);

(b) The "specially designed software" for "signal processing" and "image enhancement" does not provide for more than one of the following:

(1) Time compression; or

(2) Transformations between domains (e.g. Fast Fourier Transform or Walsh Transform).

Advisory Note 11: Licenses are likely to be approved for export to satisfactory end-users in Country Groups QWY, the People's Republic of China (PRC) and Afghanistan of "software" controlled by sub-paragraph (a)(3)(ii) above for "digital computers" and "related equipment" exported under the provisions of ECCN 1565, **Advisory Note** 12, provided that the "software" is limited to

(a) "Software" for one or more of the functions described in ECCN 1565(h)(1)(i)(A), (B) or (C);

(b) The minimum necessary for the approved applications; and

(c) Machine executable form.

Advisory Note 12: Definitions of Terms Used in this Supplement:

"Analog computer"—

Equipment that can, in the form of one or more continuous variables:

(a) Accept data;

(b) Process data; and

(c) Provide output of data.

"Application software"—

"Software" not falling within any of the definitions of the other categories of "software".

"Cross-hosted"—

For "programming systems", those that produce "programs" for a model of electronic computer different from that used to run the "programming system", *i.e.*, they have code generators for equipment different from the host computer.

"Database"—

A collection of data, defined for one or more particular applications, physically located and maintained in one or more electronic computers or "related equipment".

"Database management system"—

"Applications software" to manage and maintain a "database" in one or more prescribed logical structures for use by other "application software" independent of the specific methods used to store or retrieve the "database".

"Development system"—

"Software" to develop or produce "software". This includes "software" to manage those activities. Examples of a "development system" are programming support environments, software development environments, and programer productivity aids.

"Diagnostic system"—

"Software" to isolate or detect "software" or equipment malfunctions.

"Digital computer"—

Equipment that can, in the form of one or more discrete variables:

(a) Accept data;

(b) Store data or instructions in fixed or alterable (writable) storage devices;

(c) Process data by means of stored sequence of instructions that is modifiable; and

(d) Provide output of data.

Note: Modifications of a stored sequence of instructions include replacement of fixed storage devices, but not a physical change in wiring or interconnections.

"Distributed database"—A "database" physically located and maintained in part or as a whole in two or more interconnected electronic computers or "related equipment", such that inquiries from one location can involve "database" access in other interconnected electronic computers or "related equipment".

"Firmware"—see "microprogram".

"High-level language"—A programming language that does not reflect the structure of any one given electronic computer or that of any one given class of electronic computers.

"Hybrid computer"—Equipment that can:

(a) Access data;

(b) Process data, in both analog and digital representations; and

(c) Provide output of data.

"Maintenance system"—"Software" to:

(a) Modify "software" or its associated documentation in order to correct faults, or for other updating purposes; or

(b) Maintain equipment.

"Microprogram"—A sequence of elementary instructions, maintained in a special storage, the execution of which is initiated by the introduction of its reference instruction into an instruction register.

"Object code" or *"object language"*—See "programming system".

"On-line updating"—Processing in which the contents of a "database" can be amended within a period of time useful to interact with an external request.

"Operating system"—"Software" to control:

(a) The operation of a "digital computer" or of "related equipment"; or

(b) The loading or execution of "programs".

"Program"—A sequence of instructions to carry out a process in, or convertible into, a form executable by an electronic computer.

"Programming system"—"Software" to convert a convenient expression of one or more processes ("source code" or "source language") into equipment executable form ("object code" or "object language").

"Related equipment"—Equipment 'embedded' in, 'incorporated' in, or 'associated' with electronic computers, as follows:

(a) Equipment for interconnecting "analog computers" with "digital computers";

(b) Equipment for interconnecting "digital computers";

(c) Equipment interfacing electronic computers to "local area networks" or to "wide area networks";

(d) Communication control units;

(e) Other input/output (I/O) control units;

(f) Recording or reproducing equipment referred to ECCN 1565 by ECCN 1572;

(g) Displays; or

(h) Other peripheral equipment.

Note: "Related equipment" containing an "embedded" or "incorporated" electronic computer, but lacking "user accessible programmability", does not thereby fall within the definition of an electronic computer.

"Self-hosted"—For "programming systems", those producing "programs" for the same model of electronic computer as that used to run the "programming system", *i.e.*, they only have code generators for the host computer.

"Software"—A collection of one or more "programs" or "microprograms" fixed in any tangible medium of expression.

"Source code" or *"source language"*—See "programming system".

"Specially designed software"—The minimum "operating systems", "diagnostic systems", "maintenance systems" and "application software" necessary to be executed on a particular equipment to perform the function for which it was designed. To make other incompatible equipment perform the same function requires:

(a) Modification of this "software" or

(b) Addition of "programs".

"Standard commercially available"—For "software" that is

(a) Commonly supplied to general purchasers or users of equipment outside controlled areas, but not precluding the personalization of certain parameters for individual customers wherever located;

(b) Designed and produced for civil applications;

(c) Not designed or modified for any "digital computer" that is part of a "digital computer" series designed and produced within a controlled area; and

(d) Supplied in a commonly distributed form.

Technical Note: In the case of "software" for mainframe "digital computers" that may have a "virtual storage capability" exceeding the limit of sub-paragraph (b)(4)(i)(A)(3) and that may be considered for export under the conditions of ECCN 1565, Advisory Notes 9 & 12, the limitation of the "virtual storage capability" of 512 MByte does not apply.

Advisory Note for the People's Republic of China: Licenses are likely to be approved for export to satisfactory end-users in the People's Republic of China of "software" controlled for export in this supplement No. 3 to Part 779, as follows:

(a) "Software" controlled only by sub-paragraph (a)(1) (of the "List of Software Subject to this Supplement to Part 779") for computers designed and produced within the People's Republic of China;

(b) "Software" controlled by sub-paragraph (a)(3)(ii) for equipment that is covered by an Advisory Note to ECCN 1565A in the Commodity Control List;

(c) "Software" not specially designed for computer-aided design, manufacture, inspection or testing of products controlled for export on the Commodity Control List;

(d) "Cross-hosted" compilers or "cross-hosted" assemblers controlled by sub-paragraph (b)(2)(i);

(e) "Software" controlled by sub-paragraphs (b)(2)(ii) or (b)

(3) for microprocessor or microcomputer development systems

that are covered by an Advisory Note on the Commodity Control List;

(f) "Operating systems" controlled by sub-paragraph (b)(4) for computers that are covered by an Advisory Note to ECCN 1565A on the Commodity Control List.

ADDITIONAL SPECIFICATIONS FOR CERTAIN TECHNICAL DATA REQUIRING A VALIDATED LICENSE TO ALL DESTINATIONS EXCEPT CANADA

(1) Technical data for metal-working manufacturing processes and specially designed software therefor (§ 779.4(d)(16)):

(i) The following are definitions of terms used in section (1) of this Supplement:

(A) "Hot die forging" is a deformation process where die temperatures are at the same nominal temperature as the workpiece and exceed 850 K (577°C, 1,070°F);

(B) "Superplastic forming" is a deformation process using heat for metals that are normally characterized by low values of elongation (less than 20%) at the breaking point as determined at room temperature by conventional tensile strength testing, in order to achieve elongations during processing that are at least 2 times those values;

(C) "Diffusion bonding" is a solid-state molecular joining of at least two separate metals into a single piece with a joint strength equivalent to that of the weakest material;

(D) "Metal powder compaction" is a process capable of yielding parts having a density of 98% or more of the theoretical maximum density;

(E) "Direct-acting hydraulic pressing" is a deformation process that uses a fluid-filled flexible bladder in direct contact with the workpiece;

(F) "Hot isostatic densification" is a process of pressurizing a casting at temperatures exceeding775 K (102°C, 215.6°F) in a closed cavity through various media (gas, liquid, solid particles, etc.) to create equal force in all directions to reduce or eliminate internal voids in the casting;

(G) "Vacuum hot pressing" is a process that uses a press with heated dies to consolidate metal powder under reduced atmospheric pressure into a part;

(H) "High pressure extrusion" is a process yielding a single-pass reduction ratio of 4 to 1 or greater in a cross sectional area of the resulting part;

(I) "Isostatic pressing" is a process that uses a pressurizing medium (gas, liquid, solid particles, etc.) in a closed cavity to create equal force in all directions upon a metal powder-filled container for consolidating the powder into a part.

(ii) Technical data covered by paragraph (d)(16) of § 779.4 is as follows:

(A) Technical data for the design of tools, dies and fixtures specially designed for the following processes:

(1) "Hot die forging";

(2) "Superplastic forming";

(3) "Diffusion bonding";

(4) "Metal powder compaction" using:

- (i) "Vacuum hot pressing";
- (ii) "High-pressure extrusion"; or
- (iii) "Isostatic pressing";

(5) "Direct-acting hydraulic pressing";

(B) Technical data consisting of process parameters as listed below used to control:

(1) "Hot die forging":

- (i) Temperature;
- (ii) Strain rate;

(2) "Superplastic forming" of aluminum alloys, titanium alloys and superalloys:

- (i) Surface preparation;
- (ii) Strain rate;
- (iii) Temperature;
- (iv) Pressure;

(3) "Diffusion bonding" of superalloys and titanium alloys:

- (i) Surface preparation;
- (ii) Temperature;
- (iii) Pressure;

(4) "Metal powder compaction" using:

- (i) "Vacuum hot pressing":
  - (a) Temperature;
  - (b) Pressure;
  - (c) Cycle time;
- (ii) "High-pressure extrusion":
  - (a) Temperature;
  - (b) Pressure;
  - (c) Cycle time;
- (iii) "Isostatic pressing":
  - (a) Temperature;
  - (b) Pressure;

(c) Cycle time;

(5) "Direct-acting hydraulic pressing" of aluminum alloys and titanium alloys:

(i) Pressure;

(ii) Cycle time;

(6) "Hot isostatic densification" of titanium alloys, aluminum alloys and superalloys:

(i) Temperature;

(ii) Pressure;

(iii) Cycle time.

(2) "Software" and technical data for "automatically controlled industrial systems" to produce assemblies or discrete parts (§ 779.4(d)(17)):

(a) "Software" with all the following characteristics:

(1) Specially designed for "automatically controlled industrial systems" that include at least eight pieces of the equipment enumerated in Technical Note (b)(1) to (9) below;

Notes: 1. The "digital computers" of the "automatically controlled industrial system" do not share a common "main storage" but exchange information by transmitting messages through a "local area network".

2. This sub-paragraph (a)(1) does not release from export control "software" in source code.

(2) Integrating, in a hierarchical manner, while having access to data that may be stored outside the supervisory "digital computer", the manufacturing processes with:

(i) Design functions; *or*

(ii) Planning and scheduling functions; *and*

(3) (i) Automatically generating and verifying the manufacturing data and instructions, including selection of equipment and sequences of manufacturing operations, for the manufacturing process from design and manufacturing data; *or*

(ii) Automatically reconfiguring the "automatically controlled industrial system" through reselecting equipment and sequences of manufacturing operation by "real-time processing" of data pertaining to anticipated but unscheduled events; *and*

Note: This sub-paragraph (3)(ii) does not control "software" that only provides rescheduling of functionally identical equipment within "flexible manufacturing units" using prestored "part" programs and a prestored strategy for the distribution of the "part" programs.

(b) Technical data for the design of "automatically controlled industrial systems" that will be used with the "software" controlled for export by sub-paragraph (a) above, regardless of whether the conditions of sub-paragraph (a)(1) are met.

Technical Note: For the purposes of paragraph (d)(17) of § 779.4:

(a) An "automatically controlled industrial system" is a combination of:

(1) One or more "flexible manufacturing units"; *and*

(2) A supervisory "digital computer" for coordination of the independent sequences of computers instructions to, from, and within the "flexible manufacturing units";

(b) A "flexible manufacturing unit" is an entity that comprises a combination of a "digital computer" including its own "main storage" and its own "related equipment", and at least one of the following:

(1) A machine tool or a dimensional inspection machine covered by ECCNs 1091A or 1370A;

(2) A "robot" covered by ECCN 1391A;

(3) A digitally controlled spin-forming or flow-forming machine covered by ECCN 1075A;

(4) Digitally controlled equipment covered by ECCNs 1080A, 1081A, 1086A or 1088A;

(5) Digitally controlled electric arc device covered by ECCN 1206A;

(6) Digitally controlled equipment covered by ECCN 1354A or by paragraph (b) of ECCN 1355A;

(7) Digitally controlled equipment covered by ECCN 1357A;

(8) Digitally controlled electronic equipment covered by ECCN 1529A; *or*

(9) A digitally controlled measuring system covered by ECCN 1532A.

Note: For the definitions of other terms in quotation marks, see ECCNs 1391A or 1565A or Supplement No. 3 to Part 779.

Note: Sub-paragraph (a) above does not control "software" (in "machine executable form" only) for industrial sectors other than nuclear, aerospace, shipbuilding, heavy vehicles, machine building, microelectronics and electronics. This Note does not release from export control design technology specified in sub-paragraph (b) above.

(3) Technical data for application to non-electrical devices to achieve:

(i) Inorganic overlay coatings or inorganic surface modification coatings,

(A) Specified in column 3 of the Table below,

(B) On substrates specified in column 2 of the Table below,

(C) By processes as defined in Technical Note (a) to (h) and specified in column 1 of the Table below, and specially designed software therefor (§ 779.4(d)(19):

TABLE

[This Table should be read to control the technology of a particular coating process only when the resultant coating in column 3 is in a paragraph directly across from the relevant substrate under column 2.

For example, chemical vapor deposition coating process technical data *are controlled* for the application of noble metal modified aluminides to superalloy substrates, but are *not controlled* for the application of noble metal modified aluminides to titanium alloys. In the second case, the resultant coating is *not* listed in the paragraph under column 3 directly across from the paragraph under column 2 listing "Titanium alloys".]

1. Coating Process[1]	*2. Substrate*	*3. Resultant Coating*
A. "Chemical Vapor Deposition" (CVD)	Superalloys	Aluminides for internal surfaces, Alloyed aluminides[2], or Noble metal modified aluminides[3]
	Titanium or Titanium alloys	Carbides, Aluminides, or Alloyed aluminides[2]
	Ceramics	Silicides or Carbides
	Carbon-carbon, Carbon-ceramic, or Metal matrix composites	Silicides, Carbides, Mixtures thereof[4], or Dielectric layers
	Copper or Copper alloys	Tungsten or Dielectric layers
	Silicon carbide or Cemented tungsten carbide	Carbides, Tungsten, Mixtures thereof[4], or Dielectric layers
B. "Electron-Beam Physical Vapor Deposition" (EB-PVD)	Superalloys	Alloyed silicides, Alloyed aluminides[2], MCrAlX (*except* CoCrAlY containing less than 22 weight percent of chromium and less than 12 weight percent of aluminum and less than 2 weight percent of yttrium)[5], Modified zirconia (*except* calcia-stabilized zirconia), or Mixtures thereof (including mixtures of the above with silicides or aluminides)[4]
	Ceramics	Silicides or modified zirconia (*except* calcia-stabilized zirconia)
	Aluminum alloys[6]	MCrAlX (*except* CoCrAlY containing less than 22 weight percent of chromium and less than 12 weight percent of aluminum and less than 2 weight percent of yttrium)[5], modified zirconia (*except* calcia-stabilized zirconia) or mixtures thereof[4]
	Corrosion resistant steel[7]	MCrAlX (*except* CoCrAlY containing less than 22 weight percent of chromium and less than 12 weight percent of aluminum and less than 2 weight percent of yttrium)[5] or modified zirconia (*except* calcia-stabilized zirconia)
	Carbon-carbon, Carbon-ceramic, or Metal matrix composites	Silicides, Carbides, Mixtures thereof[4], or Dielectric layers
	Copper or Copper alloys	Tungsten or Dielectric layers
	Silicon carbide or Cemented tungsten carbide	Carbides, Tungsten, Mixtures thereof[4], or Dielectric layers
C. "Electrophoretic deposition"	Superalloys	Alloyed aluminides[2] or Noble metal modified aluminides[3]

1. Coating Process[1]	*2. Substrate*	*3. Resultant Coating*
D. "Pack cementation" (see also A above)[9]	Superalloys	Alloyed aluminides[2] or Noble metal modified aluminides[3]
	Carbon-carbon, Carbon-ceramic, or Metal matrix composites	Silicides, Carbides, or Mixtures thereof[4]
	Aluminum alloys[6]	Aluminides or alloyed aluminides[2]
E. "Plasma spraying" (high velocity or low pressure only)	Superalloys	MCrAlX (*except* CoCrAlY containing less than 22 weight percent of chromium and less than 12 weight percent of aluminum and less than 2 weight percent of yttrium)[5], Modified zirconia (*except* calcia-stabilized zirconia), or Mixtures thereof[4]
	Aluminum alloys[6]	MCrAlX (*except* CoCrAlY containing less than 22 weight percent of chromium and less than 12 weight percent of aluminum and less than 2 weight percent of yttrium)[5], Modified zirconia (*except* calcia-stabilized zirconia), Silicides, or Mixtures thereof[4]
	Corrosion resistant steel[7]	MCrAlX (*except* CoCrAlY containing less than 22 weight percent of chromium and less than 12 weight percent of aluminum and less than 2 weight percent of yttrium)[5], Modified zirconia (*except* calcia-stabilized zirconia), or Mixtures thereof[4]
	Titanium or Titanium alloys	Carbides or Oxides
F. "Slurry deposition"	Refractory metals[8]	Fused silicides or Fused aluminides
	Carbon-carbon, Carbon-ceramic, or Metal matrix composites	Silicides, Carbides, or Mixtures thereof[4]
G. "Sputtering" (high rate, reactive, or radio frequency only)	Superalloys	Alloyed silicides, Alloyed aluminides[2], Noble metal modified aluminides[3], MCrAlX (*except* CoCrAlY containing less than 22 weight percent of chromium and less than 12 weight percent of aluminum and less than 2 weight percent of yttrium[5], Modified zirconia (*except* calcia-stabilized zirconia), Platinum, or Mixtures thereof (including mixtures of the above with silicides or aluminides)[4]
	Ceramics	Silicides, Platinum, or Mixtures thereof[4]
	Aluminum alloys[6]	MCrAlX (*except* CoCrAlY containing less than 22 weight percent of chromium and less than 12 weight percent of aluminum and less than 2 weight percent of yttrium)[5], Modified zirconia (*except* calcia-stabilized zirconia), or Mixtures thereof[4]
	Corrosion resistant steel[7]	MCrAlX (*except* CoCrAlY containing less than 22 weight percent of chromium and less than 12 weight percent of aluminum and less than 2 weight percent of yttrium)[5], Modified zirconia (*except* calcia-stabilized zirconia), or Mixtures thereof[4]
	Titanium or Titanium alloys	Borides or Nitrides
	Carbon-carbon, Carbon-ceramic, or Metal matrix composites	Silicides, Carbides, Mixtures thereof[4], or Dielectric layers
	Copper or Copper alloys	Tungsten or Dielectric layers
	Silicon carbide or Cemented tungsten carbide	Carbides, Tungsten, or Dielectric layers
H. "Ion implantation"	High temperature bearing steels	Additions of chromium, tantalum, or niobium (columbium)
	Beryllium or Beryllium alloys	Borides

1. Coating Process[1]	*2. Substrate*	*3. Resultant Coating*
	Carbon-carbon, Carbon-ceramic, or Metal matrix composites	Silicides, Carbides, Mixtures thereof[4], or Dielectric layers
	Titanium or Titanium alloys	Borides or Nitrides
	Silicon nitride or Cemented tungsten carbide	Nitrides, Carbides, or Dielectric layers
	Sensor window materials transparent to electromagnetic waves, as follows: silica, alumine, silicon, germanium, zinc sulphide, zinc selenide, or gallium arsenide	Dielectric layers

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Footnotes:

[1] Coating process includes coating repair and refurbishing as well as original coating.

[2] Multiple-stage coatings in which an element or elements are deposited prior to application of the aluminide coating, even if these elements are deposited by another coating process, are included in the term "alloyed aluminide" coating, but the multiple use of single-stage "pack cementation" processes to achieve alloyed aluminides is not included in the term "alloyed aluminide" coating.

[3] Multiple-stage coatings in which the noble metal or noble metals are laid down by some other coating process prior to application of the aluminide coating are included in the term "noble metal modified aluminide" coating.

[4] Mixtures consist of infiltrated material, graded compositions, co-deposits and multilayer deposits and are obtained by one or more of the coating processes specified in this Table.

[5] MCrAlX refers to an alloy where M equals cobalt, iron, nickel or combinations thereof, and X equals hafnium, yttrium, silicon or other minor additions in various proportions and combinations.

[6] Aluminum alloys as a substrate in this Table refers to alloys usable at temperatures above 500K (227°C).

[7] Corrosion resistant steel refers to AISI (American Iron and Steel Institute) 300 series or equivalent national standard steels.

[8] Refractory metals as a substrate in this Table consist of the following metals and their alloys: niobium (columbium), molybdenum, tungsten, and tantalum.

[9] This does not control technical data for single-stage "pack cementation" of solid airfoils.

Technical Note: The definitions of processes specified in column 1 of the Table are as follows:

(a) "Chemical Vapor Deposition" (CVD) is an overlay coating or surface modification coating process wherein a metal, alloy, composite, or ceramic is deposited upon a heated substrate. Gaseous reactants are reduced or combined in the vicinity of a substrate resulting in the deposition of the desired elemental, alloyed, or compounded material on the substrate. Energy for this decomposition or chemical reaction process is provided by the heat of the substrate.

Note 1: CVD includes the following processes: out-of-"pack", pulsating, controlled nucleation thermal decomposition (CNTD), plasma enhanced or plasma assisted.

Note 2: "Pack" denotes a substrate immersed in a powder mixture.

Note 3: The gaseous material utilised in the out-of-"pack" process is produced using the same basic reactions and parameters as the "pack cementation" process, except that the substrate to be coated is not in contact with the powder mixture.

(b) "Electron-Beam Physical Vapor Deposition" (EB-PVD) is an overlay coating process conducted in a vacuum chamber, wherein an electron beam is directed onto the surface of a coating material causing vaporization of the material and resulting in condensation of the resultant vapors onto a substrate positioned appropriately.

Note: The addition of gases to the chamber during the processing is an ordinary modification to the process.

(c) "Electrophoretic deposition" is a surface modification coating or overlay coating process in which finely divided particles of a coating material suspended in a liquid dielectric medium migrate under the influence of an electrostatic field and are deposited on an electrically conducting substrate.

Note: Heat treatment of parts after coating materials have been deposited on the substrate, in order to obtain the desired coating, is an essential step in the process.

(d) "Pack cementation" is a surface modification coating or overlay coating process wherein a substrate is immersed in a powder mixture, a so-called "pack," that consists of:

(1) The metallic powders that are to be deposited (usually aluminum, chromium, silicon, or combinations thereof);

(2) An activator (normally a halide salt); and

(3) An inert powder, most frequently alumina.

The substrate and powder mixture is contained within a retort that is heated to between 1030K to 1375K for sufficient time to deposit the coating.

(e) "Plasma spraying" is an overlay coating process wherein a gun (spray torch), which produces and controls a plasma, accepts powdered coating materials, melts them and propels them towards a substrate, whereon an integrally bonded coating is formed.

Note 1: "High velocity" means more than 750 meters per second.

Note 2: "Low pressure" means less than ambient atmospheric pressure.

(f) "Slurry deposition" is a surface modification coating or overlay coating process wherein a metallic or ceramic powder with an organic binder is suspended in a liquid and is applied to a substrate by either spraying, dipping or painting; subsequently, air or oven dried; and heat treated to obtain the desired coating.

(g) "Sputtering" is an overlay coating process wherein positively charged ions are accelerated by an electric field towards the surface of a target (coating material). The kinetic energy of the impacting ions is sufficient to cause target surface atoms to be released and deposited on the substrate.

Note: Triode, magnetron, or radio frequency sputtering to increase adhesion of coating and rate of deposition are ordinary modifications to the process.

(h) "Ion implantation" is a surface modification coating process in which the element to be alloyed is ionized, accelerated through a potential gradient and implanted into the surface region of the substrate. The definition includes processes in which the source of the ions is a plasma surrounding the substrate and processes in which ion implantation is performed simultaneously with "electron beam physical vapor deposition" or "sputtering."

(4) Design and production technical data, including software, for commodities that are listed below in numerical order by their respective Export Control Commodity Number. The commodities and related design and production technical data are controlled for nuclear weapons delivery reasons (see § 776.18).

ECCN 2018A: Specialized machinery, equipment, and gear for producing rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets) and unmanned air vehicle systems (including cruise missile systems, target drones, and reconnaissance drones) capable of delivering nuclear weapons (as defined in § 776.18(a)), their propulsion systems and components, and pyrolytic deposition and densification equipment.

ECCN 1118A: Production equipment for the development or production of rocket propellants.

ECCN 1131A: Pumps used in propulsion systems and related components as follows: pumps (except vacuum pumps), having all flow contact surfaces made of 90 percent or more tantalum, titanium or zirconium, either separately or combined, and when designed to operate in vibrating environments of more than 12g rms between 20 Hz and 2000 Hz, except when such surfaces are made of materials containing more than 97 percent and less than 99.7 percent titanium.

ECCN 1133A: Valves used in propulsion systems and related components as follows: servo valves designed for flow rates of 24 liters per minute or greater at a pressure of 250 bars, and having flow contact surfaces made of 90 percent or more tantalum, titanium or zirconium, either separately or combined, and when designed to operate in vibrating environments of more than 12g rms between 20 Hz and 2000 Hz, except when such surfaces are made of materials containing more than 97 percent and less than 99.7 percent titanium.

ECCN 1302A: Specially designed nozzles for producing pyrolitically derived materials formed on a mould, mandrel or other substrate from precursor gases that decompose in the 1,573K (1,300°C) to 3,173K (2,900°C) temperature range at pressures of 133.3 Pa to 19.995 kPa. (Commodities described in this entire entry.)

ECCN 1357A: Equipment for the production of fibers covered by ECCN 1763A, or their composites as follows, and specially designed components and accessories therefor. (Commodities described in this entire entry.)

ECCN 1361A: Commodities described in entire entry, except for paragraph (e) under the "List of Wind Tunnels Controlled by ECCN 1361A."

ECCN 1362A: Vibration test equipment. (Commodities described in this entire entry.)

ECCN 1385A: Specially designed production equipment for gyroscopes (gyros), accelerometers and inertial equipment controlled by ECCN 1485A. (Commodities described in this entire entry.)

ECCN 1460A: Commodities described in paragraphs (c), and (d) as applicable to (c), under the "List of Nonmilitary Equipment Controlled by ECCN 1460A" for lightweight turbojet and turbofan engines (including turbocompound engines) that are small and fuel efficient.

ECCN 1485A: Commodities described in this entire entry (Note: Department of State, Office of Munitions Control, has jurisdiction over certain inertial system technical data (see Interpretation 21 of Supplement No. 1 to § 799.2)).

ECCN 1501A: Commodities described in paragraphs (b)(2) through (5) and (c) under the "List of Navigation, Direction Finding, Radar and Airborne Communication Equipment Controlled by ECCN 1501A" for launch and ground support equipment, including precision trecking systems usable for complete rocket systems and unmanned air vehicle systems described in § 776.18(a).

ECCN 1516A: Commodities described in paragraph (c) under the "List of Receivers and Specialized Parts and Accessories Controlled by ECCN 1516A" for telemetering and telecontrol equipment usable for: 1. complete rocket systems and unmanned air vehicle systems described in § 776.18(a); and 2. launch and ground support of the above systems.

ECCN 1517A: Commodities described in paragraph (c) under the "List of Radio Transmitters and Components Controlled by ECCN 1517A" for telemetering and telecontrol equipment usable for: 1. complete rocket systems and unmanned air vehicle systems described in § 776.18(a); and 2. launch and ground support of the above systems.

ECCN 1518A: 1. Telemetering and telecontrol equipment usable for: 1. complete rocket systems and unmanned air vehicle systems described in § 776.18(a); and 2. launch and ground support of the above systems.

ECCN 1519A: Commodities described in paragraph (c) under the "List of Equipment Controlled by ECCN 1519A" for single- and multi-channel communications transmission equipment as follows: 1. telemetering and telecontrol equipment usable with complete rocket systems and unmanned air vehicle systems described in § 776.18(a), and 2. precision tracking systems for the above systems.

ECCN 1522A: Commodities described in paragraphs (b) and (c) under the "List of Lasers and Laser Systems Controlled by ECCN 1522A" as follows: 1. test and alignment equipment for flight control systems usable in complete rocket systems and unmanned air vehicle systems described in § 776.18(a); and 2. precision tracking systems for the above systems.

ECCN 1529A: 1. Commodities described in paragraph (a) under the "List of Equipment Controlled by ECCN 1529A" for launch and ground support equipment usable for complete rocket systems and unmanned air vehicle systems described in § 776.18(a); and 2. commodities described in paragraph (b)(4) under the List when part of a test system described in ECCN 1361A or 1362A.

ECCN 1531A: Commodities described in paragraphs (a) and (c) through (e) under the "Illustrative List of Frequency Synthesizers Controlled by ECCN 1531A" as follows: 1. avionics equipment usable in complete rocket systems and unmanned air vehicle systems described in § 776.18(a); 2. vibration test equipment (ECCN 1362A) and wind tunnels (ECCN 1361A); and 3. launch and ground support equipment usable for the systems described in § 776.18(a).

ECCN 1564A: A-D converters described in paragraph (d)(2)(D)(*m*)(1) under the "List of Electronic Component Assemblies, Sub-Assemblies, Printed Circuit Boards, and Microcircuits Controlled by ECCN 1564A" when usable in systems described in § 776.18(a) and having any of the following characteristics: rated for continuous operation at temperatures from below -45°C to above 55°C; designed to meet military specifications for ruggedized equipment, or modified for military use; or designed or radiation resistance.

ECCN 1565A: 1. Specially designed analog computers or specially designed hybrid (combined analog/digital) computers that are described in paragraphs (c) through (d), and (h) as applicable to (d), under the "List of Electronic Computers and Related Equipment Controlled by ECCN 1565A" for modeling, simulation, or design integration of the following: complete rocket systems and unmanned air vehicle systems described in § 776.18(a); and 2. technical data for analog or digital computers and related equipment that provide special capabilities as described in paragraphs (a), (b), and (f) under the "List of Electronic Computers and Related Equipment Controlled by ECCN 1565A."

ECCN 1568A: A-D converters described in paragraph (k) under the "List of Equipment Controlled by ECCN 1568A" when usable in systems described in § 776.18(a) and having any of the following characteristics: rated for continuous operation at temperatures from below -45°C to above 55°C; designed to meet military specifications for ruggedized equipment, or modified for military use; or designed for radiation resistance.

ECCN 1587A: Commodities described in paragraph (c) under the "List of Characteristics of Quartz Crystals and Assemblies Thereof Controlled by ECCN 1587A" when usable as launch and ground support equipment.

ECCN 1595A: Gravity meters (gravimeters), gravity gradiometers and specially designed components therefor, designed or modified for airborne or marine use, and having a static or operational accuracy of one milligal or better, with a time to steady-state registration of two minutes or less.

ECCN 1715A: Propellants and constituents as follows: high energy density fuels such as Boron Slurry, having an energy density of 40×10^6 joules/kg or greater.

ECCN 1801A: Propellants and constituents as follows: Polymeric substances, specifically: 1. carboxy-terminated polybutadiene (CTPB), and 2. hydroxy-terminated polybutadiene (HTPB).

● (5) Development and production technical data, including "specially designed software," for reciprocating diesel engine ground vehicle propulsion systems having all of the following specifications:

(a)(i) A box volume of 1.2 m^3 or less;

(ii) An overall power output of more than 750 kW based on 80/1269/EEC or ISO 2534;

(iii) A power density of more than 700 kW/m^3 of box volume.

(b) Development and production technical data for solid or dry film cylinder wall lubrication permitting operation at temperatures in excess of 723 K (450°C) measured on the cylinder wall at the top limit of travel of the top ring of the piston.

Notes: 1. The box volume is defined as the product of three perpendicular dimensions measured in the following way:

Length: The length of the crankshaft from front flange to flywheel face;

Width: The greatest of the following:

(A) The outside dimension from valve cover to valve cover;

(B) The dimension of the outside edges of the cylinder heads; *or*

(C) The diameter of the flywheel housing;

Height: The greater of the following:

(A) The dimension of the crankshaft centerline to the top plane of the valve cover (or cylinder head) plus two times the stroke; *or*

(B) The diameter of the flywheel housing.

● (6) Technical data for aircraft and helicopter airframes, for aircraft propellers, and for aircraft and helicopter airframe, aircraft-propeller, and "helicopter-rotor-systems" components, as follows, and "specially designed software" therefor:

Technical Note: "Helicopter-rotor-systems" consist of hubs, blades, blade attachments and upper controls. Upper controls are those control elements located in the rotating system, including the swashplate if used.

(i) Design technical data using computer-aided aerodynamic analyses for integration of the fuselage, propulsion system and lifting and control surfaces to optimize aerodynamic performance throughout the flight regime of an aircraft;

(ii) Technical data for the design of active flight control systems, as follows:

(A) Technical data for configuration design for interconnecting multiple microelectronic processing elements (on-board computers) to achieve high-speed data transfer and high-speed data integration for control law implementation;

(B) Technical data for control law compensation for sensor location and dynamic airframe loads, *i.e.*, compensation for sensor vibration environment and for variation of sensor location from center of gravity;

(C) Technical data for electronic management of systems redundancy and data redundancy for fault detection, fault tolerance and fault isolation;

Note: This paragraph does not control technical data for the design of physical redundancy in hydraulic or mechanical systems or in electrical wiring.

(D) Technical data for design of flight controls that permit in-flight reconfiguration of force and moment controls;

Technical Note: Active flight control systems function to prevent undesirable aircraft motions or structural loads by autonomously processing outputs from multiple sensors and then providing necessary preventative commands to effect automatic control.

(iii) Design technical data for integration of flight control, navigation and propulsion control data into a flight management system for flight path optimization;

(iv) Design technical data for protection of avionic and electrical sub-systems against electromagnetic pulse (EMP) and electromagnetic interference (EMI) hazards from sources external to the aircraft, as follows:

(A) Technical data for design of shielding systems;

(B) Technical data for the configuration design of hardened electrical circuits and sub-systems;

(C) Determination of hardening criteria for the above;

(v) Technical data for the design, production and reconstruction of adhesively bonded airframe structural members designed to withstand operational temperatures in excess of 120°C (248°F);

Note: Airframe structural members mentioned in this paragraph do not include engine nacelles and thrust reversers.

(vi) Technical data for the design and production of propeller blades constructed wholly or partly of composite materials, and specially designed hubs therefor;

Note: This paragraph does not control technical data for the production of propeller blades that are:

(a) Constructed wholly of wood or glass-fiber-reinforced plastics; *or*

(b) Constructed mainly of wood or glass-fiber-reinforced plastics and that use other materials only in the leading edge or tip.

(vii) Technical data for the design and production of digital electronic synchrophasers specially designed for propellers; technical data for the design of digital electronic controls for propellers; and technical data for the production of digital electronic controls for the propellers described in paragraph (vi) above;

(viii) Technical data for the design and production of active laminar flow control lifting surfaces;

Note: Design technical data covered by this paragraph includes the data used to substantiate the design approach.

(ix) Technical data for the development of helicopter multi-axis fly-by-light or fly-by-wire controllers that combine the functions of at least two of the following into one controlling element:

(A) Collective controls;

(B) Cyclic controls;

(C) Yaw controls;

(x) Technical data for the development of "circulation controlled" anti-torque or directional control systems for helicopters;

Technical Note: "Circulation-controlled" anti-torque and directional control systems utilize air blown over aerodynamic surfaces to increase or control the forces generated by the surfaces. Buried fan-in-fin anti-torque designs fitted or not fitted with guide vanes such as the "fenestron" are excluded from this category.

(xi) Technical data for the development of helicopter rotor blades incorporating variable geometry airfoils;

Technical Note: Variable geometry airfoils utilize trailing edge flaps or tabs, or leading edge slats or pivoted nose droop, that can be controlled in position in flight.

(xii) Technical data for the development of active control of helicopter blades and other surfaces used to generate aerodynamic forces and moments;

Technical Note: Active control (of helicopter blades and other surfaces used to generate aerodynamic forces and moments) functions to prevent undesirable helicopter vibrations, structural loads, or helicopter rotor dynamic behavior by autonomously processing outputs from multiple sensors and then providing necessary preventive commands to effect automatic control.

• (7) Technical data including "specially designed software" for "helicopter power transfer systems" or for their specially designed components as follows:

(i) Technical data for the design of "helicopter power transfer systems" or for their specially designed components for computer-aided design (CAD) or computer-aided design/computer aided manufacturing (CAD/CAM). This includes design and analysis computer programs, parametric helicopter gearbox performance analysis and helicopter load-cycle analysis and selection;

(ii) Technical data for "helicopter power transfer systems" or for their specially designed components, covered by ECCN 1460A, for performance analysis and installation design studies, shall require an individual validated license for a period of eight years (as defined in ECCN 1460A, Note 2) after those systems have entered civil use;

(iii) Technical data for the fabrication of "helicopter power transfer systems" or for their specially designed components, covered by ECCN 1460A, and which embody any technology listed in ECCN 1460A, Note 9, shall require an individual validated license for a period of eight years (as defined in ECCN 1460A, Note 2), unless the technology remains listed in ECCN 1460A, Note 9, for a longer period;

Note: The technical data described in this paragraph may by exported to COCOM member nations under General License GTDR, provided that such "helicopter power transfer system" listed technologies have been in bona fide "civil use" for more than six years, as defined in ECCN 1460A, Note 2.

(iv) Technical data for the fabrication of "helicopter power transfer systems" or for their specially designed components, covered by ECCN 1460A, and which do not embody any technology listed in ECCN 1460A, Note 9, shall require an individual validated license for a period of eight years (as defined in ECCN 1460A, Note 2) after those systems have entered civil use;

Note: The technical data described in this paragraph may be exported to COCOM member nations under General License GTDR.

(v) Technical data for the assembly and production testing of "helicopter power transfer systems" or for their specially designed components, covered by ECCN 1460A, shall require an individual validated license for a period of eight years (as defined in ECCN 1460A, Note 2) after those systems have entered civil use;

Note: The technical data described in this paragraph may be exported to COCOM member nations under General License GTDR.

(vi) Technical data for on-site installation, operation, maintenance and repair of "helicopter power transfer systems," covered by ECCN 1460A, shall require an individual validated license for a period of eight years (as defined in ECCN 1460A, Note 2) after those systems have entered bona fide civil use;

Note: The technical data described in this paragraph may be exported to COCOM member nations under General License GTDR, or to all other T & V destinations, except the People's Republic of China and Afghanistan, when sent as part of a transaction involving and directly related to, a commodity licensed for export from the United States, or authorized for reexport, to the same consignee and destination to which the commodity was or will be exported.

(vii) Technical data for overhaul and refurbishing "helicopter power transfer systems" or for their specially designed components covered by ECCN 1460A, and which embody any technology listed in ECCN 1460A, Note 9, shall require an individual validated license for a period of eight years (as defined in ECCN 1460A, Note 2) after those systems have entered bona fide civil use, unless the technology remains listed in ECCN 1460A, Note 9, for a longer period;

Note: The technical data described in this paragraph may be exported to COCOM member nations under General License GTDR, provided that such "helicopter power transfer system" listed technologies have been in bona fide "civil use" for more than six years, as defined in ECCN 1460A, Note 2.

(viii) Technical data for overhaul and refurbishing "helicopter power transfer systems" or for their specially designed components covered by ECCN 1460A, and which do not embody any technology listed in Note 9, shall require an individual validated license for a period of eight years (as defined in ECCN 1460A, Note 2) after those systems have entered bona fide civil use.

Note: The technical data described in this paragraph may be exported to COCOM member nations under General License GTDR, or to all other T & V destinations, except the People's Republic of China and Afghanistan, when sent as part of a transaction involving and directly related to, a commodity licensed for export from the United States, or authorized for reexport, to the same consignee and destination to which the commodity was or will be exported.

• (8) Technical data, including "specially designed software" for gas turbine aircraft gas turbine APUs or for their specially designed components (including controlled under ECCN 1372A), as follows:

(i) Technical data for the design of gas turbine aero-engines or aircraft gas turbine APUs or for their specially designed components for computer-aided design (CAD) or computer-aided design/computer-aided manufacturing (CAD/CAM). This includes design and analysis computer programs, parametric engine performance analysis, engine cycle analysis and selection component aerodynamic design, airfoil cooling and seal design;

(ii) Technical data for specific gas turbine aero-engines or aircraft gas turbine APUs or for their specially designed components, covered by ECCN 1460A, for performance analysis and installation design studies, shall require an individual validated license for a period of twelve years (as defined in ECCN 1460A, Note 2) after those engines have entered civil use;

(iii) Technical data for the fabrication of gas turbine aero-engines or aircraft gas turbine APUs or for their specially designed components, covered by ECCN 1460A, and which embody any technology listed in ECCN 1460A, Note 8, shall require an individual validated license for a period of twelve years (as defined in ECCN 1460A, Note 2), unless the technology remains listed in ECCN 1460A, Note 8, for a longer period;

Note: The technical data [except technical data controlled for foreign policy purposes and described in Part 379, Supplement No. 4, paragraph (4)] described in this paragraph may be exported to COCOM member nations under General License GTDR, provided that such gas turbine aero-engines or aircraft gas turbine APU listed technologies have been in bona fide civil use for more than eight years, as defined in ECCN 1460A, Note 2.

(iv) Technical data for the fabrication of gas turbine aero-engines or gas turbine APUs or for their specially designed components, covered by ECCN 1460A, and which do notembody any technology listed in ECCN 1460A, Note 8, shall require an individual validated license for a period of eight years (as defined in ECCN 1460A, Note 2) after those engines have entered civil use;

Note: The technical data [except technical data controlled for foreign policy purposes and described in Part 379, Supplement No. 4, paragraph (4)] described in this paragraph may be exported to COCOM member nations under General License GTDR.

(v) Technical data for the assembly and production testing of gas turbine aero-engines or aircraft gas turbine APUs or for their specially designed components, covered by ECCN 1460A, shall require an individual validated license for a period of eight years (as defined in ECCN 1460A, Note 2) after those engines have entered civil use;

Note: The technical data [except technical data controlled for foreign policy purposes and described in Part 379, Supplement No. 4, paragraph (4)] described in this paragraph may be exported to COCOM member nations under General License GTDR.

(vi) Technical data for on-site installation, operation, maintenance and repair of gas turbine aero-engines or aircraft gas turbine APUs covered by ECCN 1460A, shall require an individual validated license for a period of eight years (as defined in ECCN 1460A, Note 2) after those systems have entered bona fide civil use;

Note: The technical data described in this paragraph may be exported to COCOM member nations under General License GTDR, or to all other T & V destinations, except the People's Republic of China and Afghanistan, when sent as part of a transaction involving and directly related to, a commodity licensed for export from the United States or authorized for reexport, to the same consignee and destination to which the commodity was or will be exported.

(vii) Technical data for overhaul and refurbishing gas turbine aero-engines or aircraft gas turbine APUs or for their specially designed components, covered by ECCN 1460A, and which embody any technology listed in ECCN 1460A, Note 8, shall require and individual validated license for a period of twelve years (as defined in ECCN 1460A, Note 2) after those engines have entered bona fide civil use, unless the technology remains listed in ECCN 1460A, Note 8, for a longer period;

Note: The technical data described in this paragraph may be exported to COCOM member nations under General License GTDR provided that such gas turbine aero-engines or aircraft gas turbine APU listed technologies have been in bona fide civil use for more than eight years, as defined in ECCN 1460A, Note 2.

(viii) Technical data for overhaul and refurbishing gas turbine aero-engines or aircraft gas turbine APUs or for their specially designed components, covered by ECCN 1460A, and which do not embody any technology listed in Note 8, shall require an individual validated license for a period of eight years (as defined in ECCN 1460A, Note 2) after those engines have entered bona fide civil use.

Note: The technical data described in this paragraph may be exported to COCOM member nations under General License GTDR, or to all other T & V destinations, except the People's Republic of China and Afghanistan, when sent as part of a transaction involving and directly related to, a commodity licensed for export from the United States, or authorized for reexport, to the same consignee and destination to which the commodity was or will be exported.

● (9) Technical data for marine gas turbine engines that are controlled under ECCN 1431A (including components controlled under ECCN 1372A), as follows:

(i) Technical data that is common to aero-engines technical data controlled by paragraph (8) is controlled pursuant to paragraph (8) above;

(ii) Technical data for liquid-cooled turbine blades or vanes and nozzles capable of operating in hot gas temperature environments greater than 1,000°C and their associated systems;

Technical Note: "Associated systems" are closely connected to the engine and consist of the specially designed cooling fluid and fuel control systems, pumps, condensers and fluid purification systems;

(iii) Technical data for fuel nozzles, combustors and gas turbine engine-mounted fuel-handling systems (fuel pumping, metering and controls) that permit marine gas turbines to burn heavy residual fuel-oils (ASTM grades 5 and 6 or equivalent);

Technical Note: ASTM grade 5 residual fuel-oil has a maximum kinematic viscosity of 81 centistrokes at 50°C (122°F), and ASTM grade 6 reidual fuel-oil has a kinemaic range of 91 to 636 centistrokes at 50°C (122°F). Kinematic viscosity is measurd by the Saybolt-furol viscosimeter (the test measures the time an econds for 60 cc of the oil to pass through the furol orifice).

(iv) Technical data for high-temperature (above 700° C gas temperature) heat exchangers for preheating compressor exit air;

(v) Technical data for lightweight, compact combined gas turbine and steam (COGAS) systems having heat recovery rates of more than 40,000 BTU/hr. per cubic foot of waste heat boiler volume or more than 1000 BTU/hr. per pound of waste heat boiler weight, designed for use with gas turbine engines for marine propulsion or shipboard power generation.

PARTS 780-784

[*RESERVED.*]

Accordingly, the Export Administration Regulations (15 CFR Parts 368–399) are amended as follows:

PART 375—[AMENDED]

1. The authority citation for Part 375 is revised to read as follows:

Authority: Pub. L. 96–72, 93 Stat. 503, 50 U.S.C. App. 2401 *et seq.*, as amended by Pub. L. 97–145 of December 29, 1981 and by Pub. L. 99–64 of July 12, 1985; E.O. 12525 of July 12, 1985 (50 FR 28757, July 16, 1985).

2. Section 375.6 is amended by removing the last sentence of paragraph (a), revising paragraph (b)(1), and adding a paragraph (c) reading as follows:

§ 375.6 People's Republic of China End-User Certificate.

* * * * *

(b) * * *

(1) Title of contract and contract number (optional);

(c) *Substitution of Form ITA–629P.* A Form ITA–629P (Statement by Ultimate Consignee and Purchaser) may be substituted for the PRC End-User Certificate under the following conditions:

(1) The commodity to be exported is described in an Advisory Note for Country Groups QWY on the Commodity Control List;

(2) The commodity to be exported is for demonstration only and will be returned to the U.S.;

(3) The commodity to be exported is for servicing previously exported equipment and is valued at $50,000 or less; or

(4) The Chinese do not issue an End-User Certificate because the end-user is not a Chinese entity.

Dated: July 27, 1987.

Vincent F. DeCain,

Deputy Assistant Secretary for Export Administration.

[FR Doc. 87–17386 Filed 7–30–87; 8:45 am]

BILLING CODE 3510-DT-M

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15 CFR Parts 376, 379 and 399

[Docket No. 70643-7143]

Export Controls on Equipment and Technical Data Related to Nuclear Weapons Delivery Systems (Missile Systems)

AGENCY: Export Administration, International Trade Administration, Commerce.

ACTION: Final rule.

SUMMARY: With the concurrence of the Department of State, the Department of Commerce is establishing foreign policy export controls on certain types of equipment and related technical data that could be used in the development and production of missiles capable of delivering nuclear weapons. These controls are intended to limit the proliferation of such missiles around the world, to increase regional stability, and to publicly convey the United States' firm resolve to address an issue of mounting concern. They implement policies relating to non-proliferation of delivery systems that are also being implemented by several of our allies (Canada, the Federal Republic of Germany, France, Italy, Japan, and the United Kingdom). No new export license requirements are imposed on commodities by this Rule; all the commodities covered by this Rule already require a license for national security reasons. However, new validated license requirements are imposed for certain technical data covered by this Rule. The licensing policy on export of commodities and technical data that are controlled for foreign policy reasons by this Rule will be to consider applications on a case-by-case basis to determine whether such exports would contribute significantly to proliferation of such systems, except that applications that involve equipment for the manufacture of certain munitions items, controlled under ECCN 2018A on the Commodity Control List (Supplement No. 1 to 15 CFR 399.1), will generally be denied.

EFFECTIVE DATE: August 7, 1987.

FOR FURTHER INFORMATION CONTACT: Bruce Webb, Capital Goods Technology Center, Office of Technology and Policy Analysis, (OTPA), Telephone: (202) 377–3806; Eugene Christiansen, Capital Goods and Production Materials Branch, Office of Export Licensing: (202) 377–0894; Export Administration, Washington, DC 20230.

SUPPLEMENTARY INFORMATION: The United States, Canada, the Federal Republic of Germany, France, Italy, Japan, and the United Kingdom are major manufacturers and suppliers of missile-related hardware and technical data. Following multilateral negotiations, these countries have each established a common set of guidelines for export controls on missile-related hardware and technical data and a common specific listing of the commodities and technical data to be controlled. This international effort to control the spread of equipment and technical data related to strategic missiles will limit the risks of nuclear proliferation by controlling transfers that could contribute to the development and production of nuclear weapons delivery systems.

The United States Government intends to approach other foreign governments that produce missile-related commodities and technical data, to persuade them to adhere to the missile technology guidelines. This will be done to further ensure that there is no significant foreign availability of the controlled commodities or technical data.

In accordance with section 6 of the Export Administration Act of 1979, as amended, following preliminary consultation with the Congress and industry, the Foreign Policy Report regarding these controls was submitted to Congress on April 15, 1987.

Other aspects of the policy regarding nuclear weapons delivery systems are being administered under the International Traffic in Arms Regulations of the U.S. Department of State.

Rulemaking Requirements

1. Because this rule concerns a foreign and military affairs function of the United States, it is not a rule or regulation within the meaning of section 1(a) of Executive Order 12291, and it is not subject to the requirements of that Order. Accordingly, no preliminary or final Regulatory Impact Analysis has to be or will be prepared.

2. Section 13(a) of the Export Administration Act of 1979, as amended (50 U.S.C. App. 2412(a)), exempts this rule from all requirements of section 553 of the Administrative Procedure Act (APA) (5 U.S.C. 553), including those requiring publication of a notice of proposed rulemaking, an opportunity for public comment, and a delay in effective date. This rule is also exempt from these APA requirements because it involves a foreign and military affairs function of the United States. Further, no other law requires that notice of proposed rulemaking and an opportunity for public comment be given for this rule. Accordingly, it is being issued in final form. However, as with other Department of Commerce rules, comments from the public are always welcome. Written comments (six copies) should be submitted to: Joan Maguire, Regulations Branch, Export Administration, U.S. Department of Commerce, P.O. Box 273, Washington, DC 20044.

3. Because a notice of proposed rulemaking and an opportunity for public comment are not required to be given for this rule by section 553 of the Administrative Procedure Act (5 U.S.C. 553), or by any other law, under sections

603(a) and 604(a) of the Regulatory Flexibility Act (5 U.S.C. 603(a) and 604(a)) no initial or final Regulatory Flexibility Analysis has to be or will be prepared.

4. This rule involves a collection of information subject to the requirements of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* This collection was approved by the Office of Management and Budget under control number 0625-0001.

List of Subjects

15 CFR Parts 376 and 399

Exports, Reporting and recordkeeping requirements.

15 CFR Part 379

Computer technology, exports, Reporting and recordkeeping requirements, Science and technology.

Accordingly, Parts 376, 379 and 399 of the Export Administration Regulations (15 CFR Parts 368 through 399) are amended as follows:

1. The authority citation for Part 376 continues to read as follows:

Authority: Pub. L. 96-72, 93 Stat. 503, 50 U.S.C. App. 2401 *et seq.*, as amended by Pub. L. 97-145 of December 29, 1981, and by Pub. L. 99-64 of July 12, 1985; E.O. 12525 of July 12, 1985 (50 FR 28757, July 16, 1985).

2. The authority citations for Parts 379 and 399 continue to read as follows:

Authority: Pub. L. 96-72, 93 Stat. 503, 50 U.S.C. App. 2401 *et seq.*, as amended by Pub. L. 97-145 of December 29, 1981, and by Pub. L. 99-64 of July 12, 1985; E.O. 12525 of July 12, 1985 (50 FR 28757, July 16, 1985); Pub. L. 95-223, 50 U.S.C. 1701 *et seq.*; E.O. 12532 of September 9, 1985 (50 FR 36861, September 10, 1985), as affected by notice of September 4, 1986 (51 FR 31925, September 8, 1986); Pub. L. 99-440 (October 2, 1986); E.O. 12571, October 27, 1986 (51 FR 39505, October 29, 1986).

PART 376—[AMENDED]

3. Section 376.18 is added to read as follows:

§ 376.18 Equipment and related technical data used in the development of missiles capable of delivering nuclear weapons.

In support of U.S. foreign policy to limit the proliferation of missiles that are capable of delivering nuclear weapons, an individual validated license is required to export certain equipment and technical data related to the development and production of such nuclear-capable missiles to Country Groups QSTVWYZ. The specific commodities appear within ECCNs 2018, 1118, 1131, 1133, 1302, 1357, 1361, 1362, 1385, 1460, 1485, 1501, 1516, 1517, 1518, 1519, 1522, 1529, 1531, 1564, 1565, 1566, 1567, 1535, 1715, and 1801.

(a) *Definition.* The term "missiles capable of delivering nuclear weapons" is defined as rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets) and unmanned air vehicle systems (including cruise missile systems, target drones, and reconnaissance drones) capable of delivering at least a 500 kilogram (kg) payload to a range of at least 300 kilometers (km).

(b) *Licensing policy.* Applications to export the commodities and related technical data subject to this policy will be considered on a case-by-case basis to determine whether the export would make a significant contribution to proliferation of missiles capable of delivering nuclear weapons. Applications involving those commodities controlled under this section that are classified under ECCN 2018A on the Commodity Control List (Supplement No. 1 to § 399.1) and related technical data will generally be denied.

(1) In reviewing license applications subject to the missile technology controls, the following factors are among those considered to determine what action should be taken on individual applications:

(i) The assessment of the end-use;

(ii) The significance of the export in terms of the potential development of missiles capable of delivering nuclear weapons;

(iii) The capabilities and objectives of the missile and space programs of the recipient country;

(iv) The non-proliferation credentials of the importing country; and

(v) The types of assurances or guarantees against use for nuclear weapons delivery purposes or proliferation given in a particular case.

(2) License applications involving contracts entered into prior to April 15, 1987, will be considered on a case-by-case basis consistent with applicable national security licensing criteria or other applicable controls. Such license applications must be accompanied by documentation sufficient to establish the existence of a contract.

(c) Commodities and technical data controlled under this section are not eligible for special licenses.

PART 379—[AMENDED]

4. In § 379.4, the word "and" that appears at the end of paragraph (d)(19) is removed; paragraph (d)(20) is redesignated as paragraph (d)(21) and new paragraph (d)(20) is added to read as follows:

§ 379.4 General License GTDR: Technical Data under Restriction.

* * * * *

(d) *Restrictions applicable to all destinations except Canada.* * * *

(20) Technical data for the design and production of commodities that are controlled for nuclear weapons delivery reasons (see § 376.18 and Supplement No. 4 of this part), including related software; and

* * * * *

5. Supplement No. 4 to Part 379 is amended by adding a new paragraph (4) to read as follows:

Supplement No. 4—Additional Specifications for Certain Data Requiring a Validated License to All Destinations Except Canada

* * * * *

(4) Technical data, including software, for the design and production of commodities that are listed below in numerical order by their respective Export Control Commodity Number. The commodities and related design and production technical data are controlled for nuclear weapons delivery reasons (see § 376.18).

ECCN 2018A: Specialized machinery, equipment, and gear for producing rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets) and unmanned air vehicle systems (including cruise missile systems, target drones, and reconnaissance drones) capable of delivering nuclear weapons (as defined in § 376.18(a)), their propulsion systems and components, and pyrolytic deposition and densification equipment.

ECCN 1118A: Production equipment for the development or production of rocket propellants.

ECCN 1131A: Pumps used in propulsion systems and related components as follows: Pumps (except vacuum pumps), having all flow contact surfaces made of 90 percent or more tantalum, titanium or zirconium, either separately or combined, and when designed to operate in vibrating environments of more than 12g rms between 20 Hz and 2000 Hz, except when such surfaces are made of materials containing more than 97 percent and less than 99.7 percent titanium.

ECCN 1133A: Valves used in propulsion systems and related components as follows: Servo valves designed for flow rates of 24 liters per minute or greater at a pressure of 250 bars, and having flow contact surfaces made of 90 percent or more tantalum, titanium or zirconium, either separately or combined, and when designed to operate in vibrating environments of more than 12g rms between 20 Hz and 2000 Hz, except when such surfaces are made of materials containing more than 97 percent and less than 99.7 percent titanium.

ECCN 1302A: Specially designed nozzles for producing pyrolitically derived materials formed on a mould, mandrel or other substrate from precursor gases that decompose in the 1,573 K (1,300 °C) to 3,173 K (2,900 °C) temperature range at pressures of

Supp. Questions : Qs 1-2 OMITTED (CLASSIFIED)

QUESTION 3: BOTH GAO AND DOE TESTIFIED ABOUT A RECENT VISIT TO LOS ALAMOS NATIONAL LABORATORY (LANL) BY TWO ISRAELIS, AT LEAST ONE OF WHOM OBTAINED UNAUTHORIZED ACCESS TO AN UNCLASSIFIED CRAY COMPUTER. ACCORDINGLY TO A DOE SOURCE INTERVIEWED BY GAO, ONE ISRAELI ANSWERED THE PHONE IN HIS HOST'S OFFICE AT THE LANL LAB. PLEASE PROVIDE A FULL REPORT ON THESE INCIDENTS, INCLUDING SUCH INFORMATION AS: A FULL DESCRIPTION OF THE SPECIFIC RESEARCH PROJECT THAT WAS UNDERWAY AT LANL; A DESCRIPTION OF THE WORK BEING DONE AT LANL BY THE ISRAELIS' LAB CONTACTS; A SUMMARY OF PAST RESEARCH PERFORMED BY THESE VISITORS AT LANL; THE IDENTIFY OF THE VISITORS' HOME FACILITY IN ISRAEL AND A BRIEF DESCRIPTION OF THE ACTIVITIES AT THAT FACILITY; A LIST OF ALL DISCIPLINARY ACTIONS THAT HAVE BEEN TAKEN IN THIS CASE; AND AN EXPLANATION OF WHY THE ORIGINAL DOE DECISION TO DENY ACCESS DID NOT SUFFICE IN THIS INSTANCE.

RESPONSE: Enclosed is a copy of the Report of the Visits of EHUD GANANI and YEHUDA PARTOM to LANL to collaborate on Scientific Research. This report was prepared by Harry Hill of DOE Albuquerque Operations Office. Representative John Dingell, Chairman of the House Energy and Commerce Committee, has also requested information about this case. If the Hill report is not sufficient to your needs, please advise and we will provide you with copies of the more extensive documentation of this case which was complied for Congressman Dingell.

UNCLASSIFIED

Attachment for
Question 3

A REPORT OF THE VISITS OF
EHUD GANANI AND YEHUDA PARTOM
TO LOS ALAMOS NATIONAL LABORATORY
TO COLLABORATE ON SCIENTIFIC RESEARCH

Review Performed By:

Harry N Hill, DOE-AL
Donald D. McIntyre, DOE-AL
Leon A. Breault, DOE-HQ
Douglas R. Price, Sparta Inc.

UNCLASSIFIED

A. Introduction

Foreign visitor controls at Weapons Laboratories became an issue which attracted considerable attention as a result of a GAO audit of the subject. Coincidentally, at about the same time as the GAO's report to Congress, it was discovered that there were two Israeli visitors at Los Alamos collaborating with their hosts without the visits having been approved by DOE-HQ.

There were allegations that one or both of the visitors, Yehuda Partom and Ehud Ganani, had access to classified information and had been permitted to access the Los Alamos National Laboratories (LANL) Integrated Computing Network (ICN).

When it was confirmed that these two visitors were at Los Alamos, LANL was requested to investigate the situation and provide a complete report to DOE-AL. The LANL report was transmitted to AL on October 13, 1988. On October 15, 1988, AL began a review of the situation to determine the accuracy and completeness of LANL's report and to conduct interviews of LANL employees involved in this situation. On October 19, 1988, the Manager of AL provided LANL's and AL's report of the incident to DP-30, HQ.

On November 10, 1988, DOE DP-1 initiated a Headquarters review of the situation "because of the high level of Congressional interest in this matter, the concerns expressed by the Office of the Secretary, and our desire to promptly resolve any outstanding problems in this area."

The Headquarters review concluded that additional work needed to be done to determine as nearly as possible the exact facts as they pertain to the two Israeli visitors.

One of the areas identified as needing additional facts was the allegation that the Israeli visitor or visitors had access to classified data through the use of the ICN or through their contacts at the Laboratory.

Harry N Hill, Director, Management Review Division, Office of Management Planning and Analysis, AL, was designated to lead this effort. Leon Breault, Computer Security Specialist, DP-343, HQ and Douglas R. Price, a support contract employee who is also a Computer Security Specialist, assisted in the fact finding of the computer access aspects of this follow-on review. Donald D. McIntyre, Director, Internal Security and Intelligence Operations, AL, assisted in the fact finding of the other aspects of the two visits as they may have related to classified data and the purpose of these visits.

The following report was prepared based on a review of the data provided from the previous reviews, detailed analysis of additional data gathered by this review team and several interviews including on site interviews at LANL.

It is the opinion of this review team that the information in this report is as accurate and complete as can be assembled from written documentation and individuals recall of the sequence of events and conversations.

B. Access to ICN

The principle concern addressed by the special review committee was to determine if either Israeli visitor gained access to classified data thru the Integrated Computer Network (ICN).

The computer security aspect of the Israeli visit to Los Alamos was investigated by Leon Breault and Douglas R. Price. During their investigation of this particular situation they reviewed the allegations, documents, interviewed Laboratory and DOE employees, and analyzed computer generated data to verify the accesses that had been made into the ICN, who accessed it and whether the ICN was accessed by others for Yehuda Partom or Ehud Ganani. See Exhibit A for the full report of this investigative effort.

The situations that arose throughout the duration of Yehuda Partom's and Ehud Ganani's collaboration at LANL, as detailed in Exhibit A, confirm that Partom's use of the ICN was restricted to the open or unclassified partition and that the flurry of activity during the last few days of his research effort was not unusual for the project he was attempting to complete and test. The allegation that Partom's host, Jerry Wackerle, LANL, ran Partom's SHIN code or codes on the classified partition of the ICN and down partitioned the results to the open or unclassified partition for Partom's use is incorrect. Jerry Wackerle ran the code for his own use and did not share the information with Partom (Exhibit A).

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The only computer password that Ehud Ganani had access to was one that allowed Ganani to operate the personal computer that Alan H. Graham, LANL, permitted Ganani to use when Ganani was doing his collaborative work in Graham's residence. It was not a computer password that provided access to any part of the ICN (Exhibit A).

It has been alleged by Thomas J. Thomas of DOE-AL's Security Division, that Partom was issued a new password 9/27?, 11 days after Partom's visit was denied. The verified access permit date or password issue date for the referenced visit was September 12, 1988 and the verified blacklist or cancellation date was October 7, 1988 (Exhibit B). The statement that 9/27? was 11 days after Partom's visit was denied is incorrect. The date the visit was denied by IE-12, HQ was September 27, 1988 (Exhibit C). There had been discussions concerning probable denial prior to this date of September 27, 1988. Partom's access to the open or unclassified partition remained valid until October 7, 1988 while his actual usage ended October 3, 1988 (Exhibit D).

For a brief discussion of the rules governing accessibility of certain computers by foreign nationals, see Exhibit A.

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Probability of Access to Classified Data other than from the ICN and the Nature of the Work of the Hosts and their Visitors.

Graham and Ganani:

After a review of the type of work that both Alan L. Graham and his guest Ehud Ganani are involved in, it was apparent that their research at LANL is basic science and in particular the study of non-neutronian flow of liquids.

Alan L. Graham works in the Technical Engineering Support Group, LANL. The group's mission is engineering support to the Laboratory and conventional weapons design. The particular activity that Graham and Ganani were pursuing during their collaborative effort was in support of an unclassified Air Force Aeronautical Laboratory (AFAL) project at Edwards Air Force Base with some funding being provided to LANL by the Air Force. The unclassified Air Force project is understanding methods for improving the performance of rocket propellants and the problem of demixing of the propellants (Exhibit H and Exhibit M).

Alan L. Graham's work at the Laboratory is unclassified. An abbreviated job description for Graham is included in Exhibit I. We were unable to determine the exact nature of Ehud Ganani's responsibilities at Rafael where he is a section Head of the Propulsion Unit of the State of Israel's Ministry of Defense, Armament Development Authority. Ganani obtained his doctorate degree from Washington University, St. Louis, Missouri, and did postdoctoral work at the University of California, Davis, California.

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His interests are in the field of rheology of concentrated suspensions of rods and spheres, a topic which is published in the open literature. See Exhibit I for more detail relative to Ganini and his achievements relative to his collaborative effort at LANL.

Rabie, Wackerle and Partom:

Ronald L. Rabie and Jerry D. Wackerle are both employees of the Reaction Science Group of the Dynamic Testing M-Division, LANL. Their work involves both fundamental research and applied characterization of high explosive performance. It is this research and characterization effort that Yehuda Partom was collaborating on with Rabie and Wackerle. This effort is unclassified and covered extensively in the open literature.

The classified portion of the Reaction Science Group's effort is rather limited approximately 5% to 10% of their work is classified only when they test a specific weapon design or shape or they use a classified part in a test shot. These tests are always confined to the secure and protected area of the M-Division's sites. Yehuda Partom was never permitted nor did he gain access to these areas.

Yehuda Partom's collaboration efforts at LANL were to assist in researching the reaction rates of high explosives. Partom is an expert in the theory of elastic-plastic flow and in the theoretical aspects of high explosive reaction rates. This subject is discussed extensively in numerous scientific reports and conferences (Exhibit K, Exhibit N).

We were unable to determine the exact nature of Yehuda Partom's responsibilities at his home facility at Rafael. It was determined however, that he held a position at the Ballistics Laboratory of the State of Israel's Ministry of Defense, Armament Development Authority, roughly equivalent to the level of an Associate Director at LANL. He is a recognized expert in his field and has authored or co-authored numerous publications in his field of interest. For a brief description of Yehuda Partom and his field of expertise see Exhibit I.

We found no evidence that Yehuda Partom had access to any classified material or information on this particular visit or either of his two previous visits. Partom was never permitted within a secure area, classified work of the Dynamic Testing Division is minimal and is always conducted under stringent controls within the secure area, the collaborative efforts on all three visits were basic research on reaction rates of high explosives using computer codes as an analytical tool to predict behavior during detonation. In this instance, Partom's SHIN code was of interest to Ronald L. Rabie and Jerry D. Wackerle. Rabie and Wackerle have numerous codes which are similar to SHIN. Their codes and SHIN are characteristic codes which are applied as sub-models of a Surface Burning Model (Exhibit A, Exhibit N). This is a study of material science which is published extensively. Known behaviors of high explosives are useful in weapons design but these codes are not analysis of specific applications of high explosives.

Visit Requests, Arrivals, Activities and Departures.

There have been numerous assertions regarding the visits of both Yehuda Partom and Ehud Ganani with respect to their arrival, their movements while at Los Alamos and their departure.

From a detailed review of all the information available and interviews of several LANL, DOE-AL and DOE-HQ employees, we were able to determine the following significant facts pertaining to the visit requests, subsequent denial, movements while at Los Alamos and departure from Los Alamos.

Ehud Ganani:

The request for visit approval was initiated by LANL on May 16, 1988 to cover a period from September 1, 1988 thru August 31, 1989. This was to be his first collaborative visit to Los Alamos. Ehud Ganani holds a valid passport with an expiration date of May 15, 1992.

Until approximately September 13, 1988, these visits were discussed within DP and IE at which time DP recommended to IE nonconcurrence of Ganani's visit. The nonconcurrence was approved by IE on September 27, 1988 and forwarded by FAX to AL and LANL on the same day (Exhibit C).

Ehud Ganani arrived in Los Alamos on September 7, 1988 and reported to Alan L. Graham on September 8, 1988 to begin his collaboration. Upon reporting to Graham, Ganani proceeded to the badge office where he was informed that the visit was not approved and there may be some problems with eventual approval, where upon Graham proceeded to set up Ganani in his garage so they both could conduct the research Ganani was to collaborate on. Ganani continued his research in Graham's garage until approximately October 7, 1988 and departed Los Alamos on October 9, 1988.

Ehud Ganani was permitted to continue his collaborative assignment from the time of his arrival until October 7, 1988 even though the Laboratory did not have an approved visit request and on September 27, 1988 the Laboratory was formally advised that the requested visit was denied (Exhibit E). For a more detailed chronology of events, see Exhibit C. For a summary of the Laboratory's management awareness of these visits and actions pertaining to these two visitors, see Exhibit F.

Yehuda Partom:

The request for visit approval was initiated by LANL on June 1, 1988 by letter from Robert S. Vrooman to David B. Waller, IE-I, HQ, for the period beginning September 12, 1988 and ending October 7, 1988. This would have been Partom's third approved visit. Previously, Partom had been approved as a visiting staff member from October, 1985 to October, 1986, and a collaborator during the period July 27, 1987 thru August 14, 1987. Partom holds a valid passport with an expiration date of May 8, 1990.

Until approximately September 13, 1988, these visits were discussed within DP and IE at which time DP recommended to IE noncurrence of Yehuda Partom's visit and on September 16, 1988, concurred in Ilya Partom's (Yehuda's wife) visit request to collaborate with the ESS Division on earth sciences and the unsaturated flow and mass transport in the subsurface environment. Actual dates in Los Alamos were from September 28, 1988 thru October 3, 1988. The noncurrence for Yehuda Partom was approved by IE on September 27, 1988 and the concurrence for Ilya was approved by IE on September 27, 1988. These documents were forwarded by FAX to DOE-AL and LANL on September 27, 1988 (Exhibit D).

Yehuda Partom arrived in Los Alamos on September 12, 1988, and reported to work at TA-6-61, a modular building outside the Laboratory secure area.

Approximately September 13, 1988, Yehuda Partom went to the badge office to get his badge and was informed that his visit was not yet approved even though he had previously been advised by form letter dated August 8, 1988 "that the Laboratory obtained DOE approval for you to render services through October 7, 1988." The referenced form letter (Exhibit G), is the standard form letter supplementing a collaborative agreement and indicating that the visit request for the previous supplement had been approved. This appears to be a routine practice but in this instance it was in error.

Yehuda Partom conducted his research work with his SHIN code, using his approved ICN access code while located outside the secure area of TA-6 until September 20, 1988 when he was moved to non-laboratory property at the JOMAR Corporation's place of business in Los Alamos. While located at JOMAR, he continued his research until October 7, 1988. His last use of the ICN was October 3, 1988. After September 20, 1988, Partom did make an occasional trip back to the modular building outside the TA-6-61 secure area to collect his personal items (Exhibit K).

Yehuda Partom was permitted by his host to continue his research from the time of his arrival until October 7, 1988, even though the Laboratory did not have an approved visit request and on September 27, 1988 they were formally advised that the requested visit was denied (Exhibit E). For a more detailed chronology of events, see Exhibit D.

For a summary of the Laboratory's management awareness of these visits and actions pertaining to these two visitors, see Exhibit F.

Yehuda Partom departed Los Alamos on October 7, 1988. He was in Albuquerque the following week to attend the 39th meeting of the International Meeting of the Aeroballistic Range Association. Tours of SNLA and LANL had been arranged as part of the Association's activities. Partom was not permitted to participate in these tours but was toured through the National Atomic Museum on Kirtland Air Force Base, Albuquerque. This is an unclassified museum operated by DOE-AL. See Exhibits J and L for more detail regarding this visit request.

Approximately October 14, 1988, subsequent to the conclusion of the Association Meeting, he departed Albuquerque presumably to return to Israel. The material related to his research at LANL that Partom took home with him or had mailed to him was unclassified and consisted of his personal papers, a copy of his SHIN code, and a copy of the unclassified M-9 Division Quarterly Report (Exhibit K).

E. Conclusions

There have been statements made that Yehuda Partom had access to classified data on his previous visits, that his host Jerry D. Wackerle ran his code (SHIN) on the classified or closed partition of the LANL Integrated Computer Network (ICN) and provided this data to Partom, that both Yehuda Partom and Ehud Ganani were working on a detonation device for Israel, that Ganani used Allan L. Graham's password to access the ICN, and that Partom was issued a password after his visit was denied.

We found nothing to support these allegations. The work at LANL for both Partom and Ganani on this visit and Partom's previous visits was unclassified, was basic research and is covered extensively in the open, published literature. This research of high explosives or rocket propellants was to gain an understanding of their behavior and not the design or fabrication of a detonation devise as alleged.

The incident of Partom's SHIN code being run on the closed or classified partition of the ICN is correct, Jerry D. Wackerle did run the SHIN code in the closed partition for his own use and did not provide any of the results of the run to Partom. The allegation that the results were given to Partom is incorrect.

Alan L. Graham gave Ehud Ganani a password to operate the personal computer that they were using in their research in support of an unclassified project for AFAL while in Graham's garage. This password does not permit access to the ICN.

Yehuda Partom was issued a password for access to the ICN on September 12, 1988, prior to visit approval but prior to visit denial as alleged.

We were unable to obtain a detailed description of the type of work Partom and Ganani are involved in at their home facility in Israel. After determining that their research or collaborative efforts were basic science, unclassified and available to whoever chooses to search the literature, it was concluded that their work at LANL would be related to that portion of their work at Rafael that may be involved in understanding the basic science of high explosive performance and rocket propellants.

The physical presence of Yehuda Partom and Ehud Ganani at Los Alamos for the purpose of collaborating with the Laboratory hosts violated DOE policy for visits and assignments of personnel from sensitive countries. The visitors arrived before their visits were approved. Ehud Ganani arrived on September 7, 1988 and reported on September 8, 1988 and Yehuda Partom on September 12, 1988.

Ehud Ganani was not permitted to work on Laboratory property at any time but did continue to collaborate with his host until October 7, 1988.

Partom collaborated with his host while he was located in an unclassified open area of Laboratory property TA-6-61 until September 20, 1988. He was then relocated to a private business in Los Alamos, the JOMAR Corporation, where he continued to collaborate with his host but on a reduced frequency until approximately October 7, 1988. While located at JOMAR, he made an occasional return trip to TA-6-61 to collect his personal items.

The Laboratory's control of these two visits violated DOE policy in the following ways:

- The visits were allowed to begin without approval from DOE.
- Collaboration continued after the visit requests were officially denied on September 27, 1988.

The information we were able to obtain indicates that Ehud Ganani was traveling on a valid passport, expiration date May 15, 1992, and as far as we were able to determine, returned directly to Israel after he left Los Alamos.

Yehuda Partom was traveling on a valid passport, expiration date of May 8, 1990. He spent the majority of the week of October 9, 1988 in Albuquerque, attending the 39th meeting of the Aeroballistic Range Association which was sponsored by Sandia and LANL. Tours of Sandia and LANL were scheduled for the attendees. Six of the scheduled attendees including Partom were from sensitive countries. Their visit requests had not been approved at the times of the tours so they were not permitted on any of the tours of Sandia or LANL.

Partom departed Albuquerque on October 14, 1988, and it is assumed that his destination was Israel.

EXHIBITS

Exhibit A - Leon Breault and Doug Price Report on Their Investigation of the ICN Usage by Partom and Ganani. (7 pgs)

Exhibit B - Partom's ICN Access Authorization. (1 pg)

Exhibit C - Ehud Ganani Dates Relative to His Visit. (1 pg)

Exhibit D - Yehuda Partom Dates Relative to His Visits. (2 pgs)

Exhibit E - Foreign Visits and Assignments. Routing Memo for Ehud Ganani and Yehuda and Elya Partom. (3 pgs)

Exhibit F - Notes of the Interview with Tiedman and Perkins. (4 pgs)

Exhibit G - Form Letter Advising Partom of Approval of His Visit. (1 pg)

Exhibit H - Notes of the Interview with Husband, AFAL. (2 pgs)

Exhibit I - Job Descriptions; Rabi, Wackerle, Graham, Partom and Ganani. (3 pgs)

Exhibit J - Interview Notes from Asay, SNLA and Roach, LANL.
Ref: Partom's Participation in the ARA Meeting in Albuquerque (2 pgs)

Exhibit K - Interview Notes from Interview with Rabie and Wackerle. (2 pgs)

Exhibit L - Proposed Visit by Partom and Five Others to SNLA and LANL. (2 pgs)

Exhibit M - Interview with Graham. (2 pgs)

Exhibit N - Surface-burn Model for Shock Initiation.
Authors: Yehuda Partom and Jerry Wackerle. (6 pgs)

Exhibit A - A.1

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Investigation conducted and report written by: Leon A. Breault, Chief of Computer and Technical Security, DP-343, HQ, and Douglas R. Price, a Computer Security Specialist, employeed by SPARTA Corporation.

COMPUTER SECURITY ASPECTS OF ISRAELI VISIT TO LOS ALAMOS INVOLVING MSRS PARTOM AND GANANI

This report considers those elements of the subject visit that relate to computer usage and the implications of such usage with respect to violation of computer security rules or unauthorized exposure of the subjects to classified information thru use of computers. The conclusions represented are based on a combination of factual information, where documents were available, interviews with persons who were involved, and analysis on the part of the investigators.

A review of pertinent information in the form of trip reports, documents submitted by the host location in explanation of the incident, articles that had been published and other investigative reports provides a distinct set of allegations that pertain to computers and computer related material. These allegations are as follows:

A. It was alleged that one of the sponsors of the visit for Mr. Partom, upon being informed of the denial of the visit request, had made statements to the effect that this was being done in anger over knowledge that Partom had gained unauthorized access to classified information on a previous visit, and had carried that information back to Israel with him.

B. An earlier investigation report of the incident was in conflict with analysis conducted by the computer security staff at Los Alamos National Lab (LANL) in that the investigation report reflected normal usage of the open partition of the Integrated Computer Network (ICN) and no other while the LANL report stated that Mr. Wackerle (the LANL scientist who was primary collaborator to Mr. Partom) had executed certain computer codes for Partom in the classified partition of the ICN and then downgraded the results to the open partition where they were accessible by Partom.

C. During the final days of Partom's work on the ICN, records indicated that he had used an excessive amount of supercomputer time.

D. Mr. Ganani, the second visiting Israeli, when not able to accomplish his work thru access to the ICN, set up shop in the garage of his sponsor (Mr. Graham-a LANL employee) where he used the sponsor's home computer to accomplish his work. It was alleged that Mr. Graham shared his user ID and password for access to the ICN with Ganani and, thru the use of a modem, Mr. Ganani was then able to gain access to the ICN and use its far superior processing capability to accomplish his work.

These were the allegations or points of concern that were of greatest interest in determining misuse of computers and possible violation of policy and practice in protecting classified computer information. Interviews were conducted with:

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Exhibit A - A.2

Tommy Thomas, a DOE employee responsible for processing foreign visitor requests and the person who had allegedly made the statements relative to the sponsor (Mr. Rabi) having stated that Partom had previously had access to classified information.

Jerry Wackerle, a LANL employee who was the principal collaborator working with Mr. Partom.

Ronald Rabie, Mr. Wackerle's division director who was alleged to have made the statement relative to Partom's previous access to classified information.

Alan Graham, a LANL employee who was the sponsor for the efforts of Mr. Ganani and who had allegedly shared his ICN password with Ganani to enable him to use the ICN system to accomplish his work.

Robbie Robertson, Dottye Alexander and Jimmie McClary, all LANL employees with varying levels of responsibility for security at LANL including primary responsibility for computer security.

A. In response to our direct question to Tommy Thomas as to what exactly had transpired in the conversation between himself and Mr. Rabie, he stated that Mr. Rabie had called him to inquire about the status of the visitor request for Mr. Partom. Mr. Thomas responded that the request had been denied. Mr. Rabie requested the reason for the denial to which Tommy responded that he was not at liberty to release that information. Mr. Rabie then speculated that it must either be that Israel had not signed the Nuclear Nonproliferation Treaty or that someone must have some information relative to Partom having gained access to classified information. This was the extent of the conversation as recalled by Mr. Thomas.

In a later interview with Mr. Rabie, he stated that he recalled the call to Mr. Thomas inquiring on the status of the visitor request and Mr. Thomas's response informing him of the denial but his recollection of the subsequent conversation was that his speculation was as to the reason being related to the fact that Israel had not signed the Nuclear Nonproliferation Treaty or that possibly Mr. Partom had been found to be a spy. He did, however, state that at this point he had become so annoyed with the difficulties created by Mr. Thomas that he was not really certain of the accuracy of his recollection of the conversation.

CONCLUSION: It would appear that the gist of what was allegedly said was merely speculation as to the reason for denial of the visitor request and was in no way an implication of either party to previous visits or to misuse of the classified computer capabilities.

B. Mr. Wackerle was questioned as to his conduct with respect to application of computer code in the classified partition and subsequent downgrading of the results to the open partition for access by Mr. Partom. He stated that he had indeed executed the code in the classified partition of the ICN, but he had done so for his own purposes and had in no way made the results available to Mr. Partom either thru downgrading the results and moving them to the open partition or thru any other means. Audit trails reflecting movement of data from the classified partition to the open partition (a

Exhibit A - A.3

permissible action under very specific terms and conditions) were presented to Mr. Wackerle as evidence of this assumption. After careful examination, Mr. Wackerle explained that the data being moved by this operation was in no way related to the Partom activity. It was data that resulted from one of several other scientific problems that he was working at the same time and, in fact, was not made available to Mr. Partom even after it was moved to the open partition as it had no bearing on his activity. Analysis of the audit trails by Mr. Price was conducted to determine whether the data files that had been moved had resulted from the execution of Partom's code and the limits of their availability when placed in the open partition. This analysis confirmed Mr. Wackerle's statements. (The audit trails are available in the Office of Safeguards and Security, Headquarters.)

CONCLUSION: The contention that Mr. Wackerle had executed Mr. Partom's code in the classified partition was, by his admission, valid. However, this execution was conducted on terms that are acceptable in the LANL processing environment. No data resulting from this execution was moved to the open partition for access by Mr. Partom nor was any result of this execution provided to Partom for his consideration.

C. Audit trail records reflect a substantial use of available CRAY supercomputer processing time for the execution of Partom's code during the last day or two of his efforts. This application consumed the 30 minutes of processing time that was allocated to Mr. Wackerle's division during the time period thereby denying access by other scientists within the division. During the interview with Mr. Wackerle, this use of supercomputer time was examined from three different perspectives: First - did the Partom application require an excessive amount of supercomputer time to execute? Second - was the code that Mr. Partom was executing of a nature such that it could only be executed on the CRAY supercomputer? and Third - why the excessive use over a short time period to the exclusion of other scientific needs within the department? As explained by Mr. Wackerle, and later verified by examination of computer program listings by Mr. Price, SPARTA Inc., Mr. Partom's code was simple Fortran statements that could have been compiled and executed on a variety of computers of a lesser processing capability than the CRAY that was used. It would simply have taken considerably longer to execute. Each execution required somewhere between two and three minutes of CRAY time to process. During the final days of Mr. Partom's stay, the application was executed multiple times with varying parameters in an effort to complete the work prior to Mr. Partom's departure. Mr. Wackerle was not aware that they were using up available CRAY time available to his department and therefore preventing access by other scientists in that department.

In the course of the interview with Mr. Wackerle, the subject of the nature of the work being performed by Mr. Partom was discussed. As explained by Mr. Wackerle, the work is entirely related to a computer code that deals with materials decomposition or deformation. The SHIN code that Mr. Partom developed is a Characteristics Code that is applied as a sub-model of a broader based surface burning model. A complete and detailed description of the mathematical elements of the code is available in open literature (ref. LA 10773 Los Alamos Report, 1986). The volume of code is on the order of 10 to 15 pages (600-700 lines) so it is not of an order of magnitude that makes it particularly difficult to examine. This code was examined by Mr. Price, SPARTA Inc., to assure that no computer security vulnerabilities were present.

Exhibit A - A.4

CONCLUSION: Although a substantial amount of CRAY supercomputer time was used in a short time period, the motivation is believable. Execution time for the application does not indicate erratic changes nor does this amount of time per execution suggest massive mathematical calculation. There does not appear to be anything irregular about this occurrence. (Copies of the code are available in the Office of Safeguards and Security, Headquarters.)

D. The interview with Mr. Graham explored his collaboration with Mr. Ganani and the unusual departure from procedure with respect to operating out of Graham's garage to accomplish his work. It was explained that the work accomplished by Mr. Ganani consisted of a technical paper on the subject of fuels separation which is his area of expertise. Mr. Graham explained that use of a personal computer located in his garage was simply an expedient accommodation when confusion persisted relative to the status of the visitor request. Although the personal computer that was used is connected to a modem, which would enable the user to dial out to another computer anywhere in the world, dialing into the open partition of the ICN would have required that Mr. Ganani provide an acceptable User ID and password before the system would allow him to process. When questioned about the allegation that he had provided Mr. Ganani with his own User ID and password so that he might have use of the advanced computing power of the ICN, Mr. Graham emphatically denied having done so. Further discussion with Mr. Graham relating to the basis for such an allegation revealed that the computer software resident on the personal computer used by Mr. Ganani included a software package that requires the user to provide a User ID and password before he can use the system. That User ID and password was made available to Mr. Ganani so that he could use the personal computer. It only permitted use of the personal computer and in no way provided him with access to the ICN or any other computer system. (Passwords used on stand alone personal computers are user options that are generally in place to prevent the curious from tampering with the owner's data or applications. Passwords to the partitions of the ICN, on the other hand, are carefully controlled codes. These codes are generated and issued to the individual ICN user by computer security personnel. The codes are protected at least to the level of information that they provide access to. Beyond that, each recipient acknowledges, in writing, that they will protect the code from the knowledge of others and that it will only be used to access processing capabilities for authorized DOE work.)

As a further check, audit records were examined by Mr. Price, SPARTA Inc., to determine what activity had occurred under Mr. Graham's user ID during the time that Mr. Ganani was in Los Alamos. This examination confirmed that the only activity that had taken place was a series of interactions in which Mr. Graham had checked his automated mail box for messages.

CONCLUSION: Evidence supports Mr. Graham's statements relative to the activities of Mr. Ganani. While his provision for Mr. Ganani to conduct his work in the garage is unusual, it does not support any allegation of misconduct relative to unauthorized use of passwords to access the ICN. The document produced by Mr. Ganani would not have required the use of processing capability beyond that available in a personal computer.

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Exhibit A - A.5

In summary, while LANL may have had other problems with respect to violation of procedures related to the approval of foreign visitors, a detailed examination of the facts regarding the use of government computers and scientific collaboration shows no evidence of violation of long standing principles. The four principal allegations, outlined in the detail of this report, were distorted. When each allegation was examined in detail, the facts supported a logical explanation of positive conduct that was totally in accordance with DOE procedures and was in the best interests of the U.S. Government. There is no evidence of compromise of classified information.

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Exhibit A - A.6

COMPUTER SECURITY OF THE INTEGRATED COMPUTER NETWORK (ICN) AS IT RELATES TO COMPUTER USE BY GANANI AND PARTOM

While evidence shows that Mr. Ganani had no access to the ICN, Mr. Partom did have access to one element of the ICN known as the "Open Partition." The Open Partition is a structured part of the network which permits access to a specified set of computers on which only unclassified data can be processed. No classified data is permitted to be available to these computers and all users are thoroughly briefed regarding the limitations in use of these computers. As with all partitions of the ICN, users are required to prove their identify by providing a User ID and a password, assigned and controlled by computer security personnel, before access is permitted. User identification that unlocks access to this set of unclassified processors does not permit access to other processors in the network that process other levels of data sensitivity.

Limitations of user access in the unclassified partition has been tested and re-tested by experts both internal and external (NSA) to DOE and is proven to be effective. It is continually tested by a battery of programs as changes occur to control programs in the ICN and, as further assurance, is periodically tested by expert groups to assure continuance of security properties.

Exhibit A - A.7

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POLICY GAP IN RULES GOVERNING ACCESSIBILITY OF CERTAIN COMPUTERS TO FOREIGN NATIONALS

Certain levels of computer technology are precluded from export from the U. S. for reasons of protecting superior levels of processing power as well as certain innovative qualities, all of which contribute to the posture of our national defense capability. A list of such items is maintained and modified as new technologies emerge and older ones become less significant. What appears to be missing, as best I can determine, is a policy on the use of such prohibited or protected technologies by foreign nationals. In the present operating environment, foreign nationals need only subscribe to certain commercially available network capabilities or participate in a collaborative effort with American scientists in order to have these processing capabilities available to them. While this permissive operation subjects the foreign user to the possibility of discovery, in the case of application of codes in support of their defense capability, it does not prohibit their access to the processing power or technology associated with this protected computer hardware.

A national policy should be promoted that clearly delineates the U. S. Government position with respect to this operating anomaly. It may well be our intent to continue to support this seemingly contradictory philosophy, however, recognition of its parameters and intent should be documented. The absence of any policy in this regard may well inhibit scientific collaboration by those who are more cautious or permit far more exposure than should be allowed by those more concerned with technological advancement and not restrained by policy.

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Exhibit B - B.1

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ICN OPEN PARTITION ACCESS AUTHORITY FOR PARTOM DURING 1988

1. Yehuda Partom, Account #802714
    a. Assigned User Number 802714 in July 1987.
    b. Access granted 30 July 1987.
    c. Partom left in late summer 1987, but access continued until 20 September 1988, when this account was blacklisted.
    d. No access was made under User # 802714 after Partom left Los Alamos in late summer 1987. (Reverification of this in progress currently.)
2. Yehuda Partom, Account # 803014
    a. Account requested in June 1988 and set up in "blacklisted" state pending Partom's arrival and signing of form.
    b. Access permitted ("unblacklisted") on 12 September 1988 at 13:30:13.
    c. Blacklisted 7 October 1988 at 11:23:47 by request of Perkins.
    d. Unblacklisted 17 October 1988 at 13:26:01 and reblacklisted 17 October 1988 at 16:57:44 by McClary and OS-4 for purpose of reviewing file for investigation purposes.
3. Mrs. Partom, Account # 801977
    a. Account never activated. No blacklistings or unblacklistings. No usage or access.

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Exhibit C -C.1

EHUD GANANI

05/16/88	Hecker to Waller - request for Ganani visit (I1.1) (I1.4) 09/01/88 thru 08/31/89. Passport #2255095 expires 05/15/92.
05/20/88	McIntyre transmitted requests to Waller, IE-1.
08/05/88	Holliway to Ganani provides info. to Ganani regarding reimb. (I3.11)
09/06/88	Sprouse called T. K. Lau - no decision yet. (H3.1)
09/07/88	Ganani arrived in Los Alamos. (I3.9)
09/08/88	Curtis advised Sprouse no decision possibly by 09/12/88. (H3.1)
09/08/88	Date Ganani signed Collaborator's Agreement. (I3.8)
09/08/88	Arrives, hired on, reported to work at TA-8-30. (Graham) (B6.6)
09/13/88	DP recommended nonconcurrence. (H4.7)
09/13/88	Curtis advised Sprouse of some problems and OSS recommending nonconcurrence unless additional security measures are taken. (H3.1)
09/14/88	DP-34/DP-32 recommends nonconcur to DP-30. (H4.4)
09/15/88	T. K. Lau notified Sprouse, strong case for denial. Holding for Director/IA to return 09/16/88. (H3.1)
09/15/88	Memo - Salazar thru Robertson to Tiedman, possible problems. (H2.1)
09/20/88	Jaffee memo to DP-30 - need better definitions.
09/20/88	Memo - J. D. Allen thru Hill to Holliway (I3.3). Ganani at Los Alamos. No approval, valid J-1 Visa, Collaborator's Agreement.
09/21/88	Thomas, AL Security called Sprouse, LANL, stating that he suspected Ganani was on Laboratory property without DOE approval.
09/27/88	Jaffe, IE-12 disapproved Ganani's visit. (H4.7)
09/27/88	Fax - T. K. Lau to Mary Trujillo, denial package for Partom and Ganani. (H4.2)
09/27/88	Fax - T. K. Lau to Thomas, denial package on Partom and Ganani. (H4.9-H4.17)
10/03/88	Tiedman to Hill memo - Ganani denial. (H1.1)
10/04/88	Supplement 1 extend to 09/30/89. Not signed by Ganani. (I3.1)

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Exhibit D - D.1

YEHUDA PARTOM

10/85 - 10/86	Partom's first visit. (J2.17) See (K1.2). Visiting staff member. (J2.22)
07/26/87 - 08/17/87	Partom's second visit. (J2.21)
05/07/87	Collaborator's Agreement COL-2888 sent to Partom for his signature. (J2.18)
08/05/87	Supplement 1 to COL-2888 extending to 09/30/88 (J2.7), signed 08/11/87.
05/12/88	Request for unclassified visit or assignment 09/12/88 - 10/07/88, valid B-1 Visa, requesting a J-1 (J2.15). Passport #2744753, expires 05/08/90. (J2.16)
06/01/88	Vrooman to Waller - request for visit.
06/14/88	Hecker to Waller - request for Partom visit. (J2.6)
08/08/88	Supplement 2 to COL-2888 extend to 09/30/89. Also, indicates approval thru 10/07/88 (J2.4) signed by Partom 09/12/88 (I4.4) (C1.19) - Approval Letter.
09/06/88	Sprouse called T. K. Lau - no decision yet. (H3.1)
09/12/88	Began work. Giving a paper at the Aerobalistic American Range Association Meeting in Albuquerque the week of 10/10/88. (J2.3)
09/12/88	Arrived, hired on, reported to work at TA-6-61. (Rabie) (B6.9)
09/13/88	Curtis advised Sprouse of some problems, and OSS recommending noncurrence unless additional security measures are taken. (H3.1)
09/13/88 or 09/14/88	Went to badge office, told approval had not been received. (Rabie) (B6.9)
09/13/88	DP recommended nonconcurrence. (H4.6)
09/14/88	DP-34/DP-32 recommends nonconcur to DP-30. (H4.4)
09/15/88	T. K. Lau notified Sprouse, strong case for denial. Holding for Director/IA to return 09/16/88. (H3.1)
09/15/88	Memo - Salazar thru Robertson to Tiedman, possible problems. (H2.1)

Exhibit D - D.2

YEHUDA PARTOM (continued)

09/16/88	Rabie thru Gritzo to Browne. Denial received late by Rabie 09/16/88. (J2.3) (also J2.6)
09/20/88	Jaffee memo to DP - questioning criteria for granting or denying visits.
09/20/88	Memo - Rabie thru Gritzo to Browne, request to pay Partom 09/19/88 thru 10/07/88. (J2.2)
09/20/88	Partom moved offsite to JOMAR. (Rabie) (B6.9)
09/21/88	Thomas, AL Security, called Sprouse, LANL, stating that he suspected Partom was on Laboratory property without DOE approval.
09/27/88	IE Jaffe disapproved Partom's visit. (H4.6)
09/27/88	FAX - T. K. Lau to Mary Trujillo, denial package for Partom and Ganani. (H4.2)
09/27/88	FAX - T. K. Lau to Thomas, denial package for Partom and Ganani. (H4.9-H4.17)
09/27/88	Wife's visit approved to do research on unsaturated flow and mass transport in the subsurface environment. (H4.8)
10/03/88	Memo - Tiedman to Gritzo, advising of Partom's denial. (J1.1)
10/07/88	Partom's last day of work. Departs Los Alamos. (Rabie) (B6.10)
10/10/88	Scheduled to present a paper to the Aerobalistic Range Association Meeting in Albuquerque this week.

Exhibit E - E.1

FOREIGN VISITS AND ASSIGNMENTS ROUTING MEMO

Name of Visitor: PARTOM, YEHUDA
Country of Citizenship: IS
Date Entered: 06/20/88
Visit Number: 302

Facility: LANL
Program Office: DP
Dates: 09/12/88 to 10/07/88
Subject: WILL CONTINUE COLLABORATION IN FUNDAMENTAL RESEARCH ON THE SHOCK-INDUCED DECOMPOSITION OF EXPLOSIVES
Remarks: EXTENSION - REFER VISITOR'S #173

Facility: DP's memo (Siebert to Gilbert) for non concurrence and
Program Office:
Dates:
Subject: IE's memo (Jaffe to Gilbert) are attached.
Remarks: SACK's visit is pending, TK L on 9/27/88

Facility:
Program Office:
Dates:
Subject:
Remarks:

*** FOLLOWING LINES RESERVED FOR USE BY OCTP/DP ***

Concurred (Y/N): N
Date: 9/13/88
Signed: E Gilbert/pm
Comments:

*** FOLLOWING LINES RESERVED FOR USE BY IE ***

Approved (Y/N): _
Date:
Program Officer:
Approved (Y/N): N
Date: 9/27/88
Vice Director: Jaffe
Comments: Denied based upon DP denial

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Exhibit E - E.2

FOREIGN VISITS AND ASSIGNMENTS ROUTING MEMO

Name of Visitor: GANANI, EHUD
Country of Citizenship: IS

Date Entered: 05/26/88
Visit Number: 284

Facility: LANL
Dates: 09/01/88 to 08/31/89
Subject: TRANSPORT PHENOMENA IN MULTIPHASE SYSTEMS.

Program Office: ER

Remarks: DP memo (Silbert to Gilbert) of Nonconcurrence attached to field
IE memo (Jaffe to Gilbert) requesting reconsideration of SAK is also attach

Facility:
Dates:
Subject:

Program Office: 9/27/88

Remarks:

Facility:
Dates:
Subject:

Program Office:

arks:

*** FOLLOWING LINES RESERVED FOR USE BY OCTP/DP ***

Concurred (Y/N): N

Dr [illegible]

Signed: C Gilbert

Comments:

*** FOLLOWING LINES RESERVED FOR USE BY IE **

Approved (Y/N): __

Da

Program Officer:

Approved (Y/N): N

Dat

.ce Director: Jaffe

Comments: Denial based upon DP denial

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Rev 5/88

FOREIGN VISITS AND ASSIGNMENTS ROUTING MEMO

Exhibit E - E.3

UNCLASSIFIED

Name of Visitor: PARTON, ILYA S
Country of Citizenship: IS

Date Entered: 07/29/88
Visit Number: 318

Facility: LANL
Program Office:
Dates: 09/19/88 to 10/07/88
Subject: RESEARCH: UNSATURATED FLOW AND MASS TRANSPORT IN THE SUBSURFACE ENVIRONMENT.
Remarks:

Facility:
Program Office:
Dates:
Subject:
Remarks:

Facility:
Program Office:
Dates:
Subject:
Remarks:

*** FOLLOWING LINES RESERVED FOR USE BY OCTP/DP ***

Concurred (Y/N): Y
Date: 9/16/88
Signed: E. Ten Eyck
Comments:

*** FOLLOWING LINES RESERVED FOR USE BY IS ***

Approved (Y/N):
Date:
Program Officer:
Approved (Y/N): Y
Date: 9/27/88
Office Director:
Comments:

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DOE F 1325.8

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Exhibit F - F.1

United States Government

Department of Energy

memorandum

Albuquerque Operations Office

DATE: December 12, 1989

REPLY TO ATTN OF: ISIO:DDM

SUBJECT: Record to the File on Interview of LANL Employees/ R. Perkins and A. Tiedman

TO: File of Investigation of Israeli Foreign Visit to LANL

On 1/12/89, Mr. Harry Hill and I personally visited the Los Alamos National Laboratory (LANL), and interviewed Mr. Allen Tiedman, Associate Director for Administration, and his Deputy, Mr. Rodger Perkins, regarding the September - October 1988 visit of two Israeli Nationals to LANL.

Both Mr. Tiedman and Mr. Perkins advised that the facts presented in the LANL investigation report dated October 13, 1988 from Mr. James F. Jackson, Deputy Director, LANL, to Mr. James W. Culpepper, Deputy Manager, AL, were accurate and factual to the best of their knowledge. The additional points of clarification contained in this memorandum should be placed in the context of that document.

Points of Clarification:

Both Mr. Perkins and Mr. Tiedman stated LANL administration was faulty regarding the visits of Israeli Partom and Ganani. They fully admitted errors were made by LANL employees in allowing the two visitors to come to the LANL once before formal approval was received from DOE and failing to terminate the visits once the visit denials were provided to LANL by DOE HQ.

They had no specific explanations as to why Mr. Partom was allowed to remain on LANL property after September 27 when a formal FAX from T. K. Lau to LANL was received indicating that the visits had been denied. There was a gap of six days before Mr. Tiedman formally told Mr. Hill, LANL host, to remove Partom from LANL property. Both Mr. Tiedman and Mr. Perkins advised that they believed both Ganani and Partom were not on LANL property during this period. They further advised that many LANL scientific employees believed that the DOE Foreign Visitor Order 1240.2, defined a visit/assignment as that which takes place on LANL property. Visits which occur off-site, in Santa Fe or even the town of Los Alamos, are not covered under the current DOE Orders and Regulations. However, they personally advised that they believe that the "intent" of the Order is to include off-site as well as on LANL. With this in mind, they provided Mr. Jim Jackson with a set of new LANL policies for visits and arrangements of foreign nationals which was put into effect December, 1988. These new policies are tougher and directly state that off-site visits are not permissible without official approval.

UNCLASSIFIED

UNCLASSIFIED

Exhibit F - F.2

Messrs. Tiedman and Perkins further advised that LANL management did not act on the 9/16/88 verbal advise that it would probably be denied because the DOE staffer told them that there was still a chance that the visits would be approved. October 3 memo, Al Tiedman formally advised the Division Director, Gritzo that Partom's visit was denied. At this point, Partom was not allowed back on LANL property and he finally departed the city of Los Alamos on October 7, 1988. Mr. Tiedman stated that he was "mad as hell" when he was told that Partom had been allowed on LANL property without DOE HQ approval.

Regarding the purpose for Mr. Ganani's visit to LANL, Messrs. Perkins and Tiedman advised that they were told by Bob Vrooman, LANL-ISEC, and Allan Graham that the Air Force Aeronautical Laboratory (AFAL) had strongly suggested his use in order to get Graham's work on "track" again. Mr. Hill and I advised then that AFAL's Conract Officer, Capt. Mark Husband had told us that this was not accurate, in fact he stated Graham requested Ganani's help.

Both Mr. Tiedman and Mr. Perkins stated that LANL administration would do a better job of assuring that LANL followed the DOE 1240.2 Order and complied with the intent as well.

Donald D. McIntyre
ISIO

UNCLASSIFIED

UNCLASSIFIED

Exhibit F - F.3

Interview with Allen J. Tiedman - January 12, 1989

The purpose of the interview was to determine the Laboratory management interest and actions relative to foreign visits and assignments.

Mr. Tiedman stated that Laboratory senior management is involved in the approval process for foreign visitors (paperwork is processed up through Associate Director to Director). After that, senior management is informed and takes an active interest in any foreign visit, if the subject matter or purpose of the visit is unusual or the individual or country requires management attention. Management also takes an active interest in visits and assignments when there appears to be a problem with a required visit or assignment.

In the particular case of Ehud Ganani and Yehuda Partom, Mr. Tiedman was first made aware of possible problems with the approval of their visit September 15, 1988 by memo from Robertson.

Mr. Hecker was advised by memo on September 21, 1988 that there were problems with receiving approvals for Partom, Ganani and Sacks.

Mr. Tiedman formally advises WX Division and M Division of the denied visits, October 3, 1988.

Several other internal communications, telephone conversations and in person discussions not documented because exact dates could not be recalled, were made regarding the two referenced visitors. As a result, Ganani was housed in Graham's garage before he began doing any collaborative work and Partom was relocated to JOMAR corporation in Los Alamos on September 20, 1988. The two Israeli visitors departed Los Alamos on the weekend of October 7, 1988, Partom on Friday and Ganani on Sunday.

A detailed chronology of various notices of the two visitors and relevant notices is attached.

Harry Hill

UNCLASSIFIED

Exhibit F - F.4

UNCLASSIFIED

ATTACHMENT

09/08	Sprouse advised that Ganani in Los Alamos.
09/08	Ganani locates in Graham's garage.
09/09	Sprouse advises Divisions of problems and reminds them not to let unapproved visitors on site (or don't travel to Los Alamos).
09/15	Robertson to Tiedman possible problems. (No acknowledgement they are on site).
09/16	Effort to pay Partom. (Tiedman not advised)
09/20	Holliway advised Ganani on site. (Tiedman not advised)
09/20	Gritzo advised Partom accommodations offsite have been arranged. (Tiedman not advised)
09/20	Partom moves to JOMAR.
09/21	Hecker thru Tiedman problems getting three approvals. (No acknowledgement Ganani and Partom in Los Alamos)
10/03	Tiedman formally notifies Hill that Ganani visit denied. Tiedman formally notifies Gritzo that Partom visit denied.
10/05	Sprouse advises Graham that Ganani visit denied.
10/07	Tiedman meets with Robertson and Sprouse. Stated he advised Gritzo of denial. When?
10/07	Partom departs Los Alamos on Friday.
10/09	Ganani departs Los Alamos on Sunday.

UNCLASSIFIED

Exhibit G - G.1
Ref. 15.4.

AF

UNCLASSIFIED

Los Alamos
Los Alamos National Laboratory
Los Alamos New Mexico 87545

DATE: August 8, 1988
REFER TO: HRD-2-CAS
MAIL STOP: P237
TELEPHONE: (505) 667-6632

Supplement No. 2 to Collaborator Agreement No. COL-2888

Mr. Yehuda Partom
Rafael Ballistics Center
Box 2250
Haifa, ISRAEL

Dear Mr. Partom:

The Laboratory wishes to modify your Collaborator Agreement by extending the expiration date to September 30, 1989, contingent upon Department of Energy (DOE) approval for your continued work at Los Alamos. Please note that the Laboratory obtained DOE approval for you to render services through October 7, 1988. The Dynamic Testing Division is in the process of requesting further approval. Please do not prepare to render services beyond that date until you have been officially notified of this approval. All other terms of the agreement remain unchanged.

Under the terms of this agreement the actual number of fee-paid days will be negotiated directly with you by your sponsoring organization, but may not exceed 130 fee-paid days in any agreement period.

If this is acceptable to you, please sign the original of this supplement and return it to this office; the second copy is for your records.

THE UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

Marti M. Browne
Consultant and Affiliate Services

Cy: M-DO, MS P915
M-9, MS P952
Files (2)

Supplement Accepted:

Collaborator

[illegible]
Date

UNCLASSIFIED

DOE F 1325.8

UNCLASSIFIED

Exhibit H - H.1

United States Government

Department of Energy

memorandum

Albuquerque Operations Office

DATE: 12/20/88

REPLY TO ATTN OF: ISIO/DDM

SUBJECT: RECORD OF INTERVIEW AFAL SOURCE

TO: FILE OF INVESTIGATION OF FOREIGN VISIT TO LANL

On 12/20/88 I telephonically contacted the Air Force Aeronautical Laboratory at Edwards Air Force Base to discuss the purpose of the work they had contracted for at the Los Alamos National Laboratory (LANL).

I talked with Captain D. Mark Husband (805-275-5534) who identified himself as the contract officer for the reimbursable contract that was awarded to LANL scientist Allen Graham. Cpt. Husband advised that the AFAL contract was for research into basic physical characteristics of highly packed suspensions in viscous media. AFAL is primarily interested in understanding methods for improving the performance of rocket propellents. There apparently is a problem with rocket propellents demixing and losing some of their potential energy capability. Cpt. Husband advised that none of the research for this contract is classified and that the end products are not anticipated to be classified. He also sees no linkage to any nuclear weapons usage or improvements.

Cpt. Husband advised that AFAL was interested in any modeling systems that Dr. Graham could create which would aid in the understanding of fuels/propellents. This is the work that Graham has been doing for the majority of his professional career. Cpt. Husband advised that the contract was for 18 months and would terminate in September 1989. AFAL had no intentions of extending the contract at this time. I asked Cpt. Husband if the AFAL or himself had recommended Dr. Ganani to either LANL or Dr. Graham as a working collaborator on this project. Her advised that the first time that he or anyone at AFAL had heard of Ganani was when Dr. Graham telephoned AFAL and asked if he could bring Ganani over from Israel to assist him in getting his project moving again. Cpt. Husband stated that he told Graham that AFAL could not formally approve of the request and did not see a direct benefit to having Ganani assist Graham. Graham advised Cpt. Husband that he would bring Ganani over under the LANL visitor program and would fund it out of Lab money. Cpt. Husband advised that he told Graham that this was up to him.

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Exhibit H - H.2

Cpt. Husband advised that he again received a telephone call from Dr. Graham in early or mid-September, 1988 in which Dr. Graham advised that Dr. Ganani had arrived at LANL but could not get admittance to Lab property or offices because his visit/assignment request had not as yet been approved by DOE. Dr. Graham told Cpt. Husband that he was going to set Dr. Ganani up in his home to begin working on the project and that they would then move onto Lab property when the approval was given by the DOE. Cpt. Husband advised that he made no comment to Graham regarding this temporary arrangement.

Cpt. Husband advised that he was personally unaware of Dr. Ganani's professional reputation but that he had inquired and was told that Ganani was associated with the Israeli Rafael Ballistics Center.

Donald D. McIntyre

Donald D. McIntyre
ISIO

Staff Assistance to Mr. Harry Hill

Exhibit I - L.1

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1. INSERT ABOVE, CLASSIFICATION, UNCLASSIFIED, OR OFFICIAL USE ONLY

2. MESSAGE CONTAINS WEAPON DATA
☐ YES ☒ NO

3. USE WHERE REQUIRED
THIS DOCUMENT CONSISTS OF ______ PAGES
NO. ___ OF ___ COPIES, SERIES ___

U.S. DEPARTMENT OF ENERGY
TELECOMMUNICATION MESSAGE
(See reverse side for instructions.)

4. PRECEDENCE DESIGNATION ("X" appropriate box)

FOR NORMAL USE
ACTION: ☐ Routine ☒ Priority
INFO: ☐ (6 Hrs.) ☐ (1 Hrs.)

EMERGENCY USE ONLY
ACTION: ☐ Immediate ☐ FLASH
INFO: ☐ (30 Mins.) ☐ (ASAP)

5. TYPE OF MESSAGE
☒ Single Address
☐ Multiple Address
☐ Title Address
☐ Book Message
☐ Facsimile

FOR COMMUNICATION CENTER USE
MESSAGE IDENTIFICATION
NR: 0[illegible]
DTG

6. FROM ROGER B. PERKINS, DADS
LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO 87545

(Signature of authorizing official)

8. DATE January 9, 1989

COMMUNICATION CENTER ROUTING

JAN 11 8 50 AM '89

'89 JAN 9 PM 3 38

9. TO HARRY HILL, US DOE/ALBUQUERQUE OPERATIONS OFFICE
ALBUQUERQUE, NEW MEXICO 87115

FAX 844-4197

UNCLASSIFIED/N O N W D/FAX

6-3343

ATTACHED IS A RESPONSE (3 PAGES) TO YOUR REQUEST OF JANUARY 6, CONSISTING OF JOB DESCRIPTIONS OF RABIE, WACKERLE, GRAHAM, PARTOM, AND GANANI, AS WELL AS A HISTORY OF PARTOM'S PASSWORD ASSIGNMENTS. PLEASE CALL IF YOU NEED ADDITIONAL INFO.

Attachment: a/s

Distribution:
Orig - Telecom Center, w/attach., MS A150
J. F. Jackson, DDJ, w/attach., MS A101
A. L. Tiedman, ADS, w/attach., MS A120 — [illegible] 1/9/89
C. A. Robertson, OS-DO, w/attach., MS G729
CRMO, w/attach., MS A150
File

VIA UNCLASSIFIED FAX

BE BRIEF—ELIMINATE UNNECESSARY WORDS

10. ORIGINATOR (On separate lines, Enter Name, Routing Symbol, & Tel. No.)
RBP:wlh
MS A120
667-3535

11. DERIVATIVE CLASSIFIER (Enter Name & Title)
(Signature)

12. If NSI, fill in:
Classified by ____________ Original authority
☐ Declassify or ☐ Review on ____________ date or event

13. STAMP CLASSIFICATION UNCLASSIFIED

14. RESTRICTED DATA, FRD, or NSI STAMP (If Required)

UNCLASSIFIED

Exhibit I - I.2

JOB DESCRIPTIONS:

Ronald L. Rabie, PhD Physicist

Ron Rabie is the Group Leader of the Reaction Science Group (M-9) of M Division. M-9 employees 28 people and works on both fundamental research and applied characterization of high explosive performance in support of the Laboratory's programmatic efforts in commercial applications of explosives technology, conventional ordnance and nuclear weapons technology. Rabie has responsibility for all group level administrative matters including group level approval of proposed visits and group security, the group's technical direction and performance and the group's financial integrity. Rabie holds a doctorate in physics.

Jerry D. Wackerle, PhD Physicist

Jerry Wackerle is a Staff Member in the Group and is expert in matters concerning the reaction rates of high explosives. His knowledge is broad covering both theoretical and experimental expertise in this area. He has an international reputation and following based on his development of the technique of Lagrange Analysis as it is currently applied to reactive hydrodynamics and the extraction of reaction rate correlations from experimental data. Lagrange Analysis refers to the technique of measuring how bulk high explosive materials disassemble when the reaction occurs. Hydrodynamics refers to the dynamic behavior of fluids, explosives in this case, in motion. Reactive hydrodynamics refers to the hydrodynamics of materials that undergo chemical reactions as they flow. Wackerle holds a doctorate in physics.

Alan L. Graham, PhD Chemical Engineer

Alan Graham works in the Design Engineering Division (WX Division), Technical Engineering Support Group (WX-4). The group's mission is engineering support to the Laboratory and conventional weapons design. For the past 10 years, Alan has been working in the field of rheology (the study of non-Newtonian flow of liquids). This work is the basis for many observed physical phenomena, for example, the flow of coal slurried in pipelines or the flow of the blood cells in the body. Recent progress in the program has led to reduced failure in cast propellant in rock meters. The work is unclassified and Alan is part of an international community working to understand this field of physics. Alan is a 13-year employee of the Laboratory and is in good standing. He has collaborated with universities in the United States, Australia, and Israel, and is a recognized world authority in this area of study.

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Exhibit I - I.3

Yehuda Partom, PhD Physicist

Yehuda Partom is an employee of the Israeli government working at the Ballistics Laboratory at Rafael, Israel. We know of his work through his publications and our discussions with him during our three year collaboration. He is expert at the theory of elastic-plastic flow and in the theoretical aspects of high explosive reaction rates. This last ability is of most interest to us as he is one of only a few people world wide with such interests and abilities. At Rafael we believe that he is a manager at a level about equivalent to our Associate Directors, though Rafael is a much smaller Laboratory than Los Alamos. Partom holds a doctorate in physics.

Edud Ganani, PhD Chemical Engineer

Edud Ganani is Section Head of the Propulsion Unit at Rafael Industries in Haifa, Israel. His doctorate degree is from Washington University in St. Louis, Missouri. He did postdoctoral work and taught at the University of California at Davis. Dr. Ganani's interests lie in the field of rheology of concentrated suspensions of rods and spheres. He has published extensively in this area over the past 10 years. This is closely related to the studies conducted by Dr. Graham in Los Alamos. The consulting service rendered to the Laboratory during the period between September 9 through October 6, 1988, resulted in the publication of a paper entitled "Particle Size Segregation Induced by Propellant Processing." The paper was coauthored by Wayne J. Tetlow (USAF Academy), James B. Nees (USAF Military Research Associate), and Alan L. Graham (Los Alamos, WX-4). The paper was presented at the 1988 JANNAF Subcommittee meeting, NASA/Johnson Space Center, White Sands, New Mexico on November 1-3, 1988 by Cadet Tetlow.

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Exhibit J - J.1

Aleta Roach 843-5653 1/17/89

Phone call:

Partom did not take any of the Los Alamos tours in conjunction with the Areoballistic Range Association's 39th conference in Albuquerque, New Mexico, October 14, 1988.

Harry Hill

UNCLASSIFIED

UNCLASSIFIED

Exhibit J - J.2

James R. Asay, SNLA 844-1506 1/17/89

Phone call:

Where was the conference 10/10 thru 10/13? Sheraton Old Town

Did Parton visit any SNLA facility? No. Nor did any of the other attendees from sensitive countries.

All visitors from sensitive countries denied by phone and non-response to the request.

Harry Hill

UNCLASSIFIED

AL F 1325.8

UNCLASSIFIED

Exhibit K - K.1

United States Government

Department of Energy

memorandum

Albuquerque Operations Office

DATE: January 12, 1989

REPLY TO ATTN OF: ISIO:DDM

SUBJECT: Record to the File on Interview of LANL Employees - R. Rabie and J. Wackerle

TO: File of Investigation of Israeli National Foreign Visit to LANL

On 1/12/89 Mr. Harry Hill and I personally interviewed Mr. Ron Rabie and Mr. Jerry Wackerle, M-9 Division, LANL, regarding their knowledge of the visit of Dr. Yahuda Partom, Israeli National, to LANL during the period of September 12, 1988 thru October 7, 1988.

Both Mr. Rabie and Mr. Wackerle to the best of their knowledge, there was no risk of any classified or sensitive information being discussed or available to Dr. Partom during his visit. All information he had access to was already in the public sector. Partom was invited to LANL to work on explosive materials science which is fundamental science. Partom was never present at the M-9 restricted access site. He was placed in an unclassified trailer at the guard entrance to the M-9 area (2 miles distance from the M-9 working area). Rabie and Wackerle advised that the M-9 Group does not routinely work on classified projects. Approximately 90-95% of all their work is unclassified and non-sensitive. M-9, according to them, is not a weapons design group. M-9 does occasionally work on specific classified parts as part of larger projects.

Rabie advised that Partom's visit was not considered collaborative because Dr. Partom is one of the world's leading experts in his field and LANL could only gain from the visit because they knew less than he did. Mr. Rabie stated that Dr. Partom is a supervisor at the Israeli Rafael Munitions Work. Coming to LANL gives him an opportunity to get a break from administration and do pure research which he does not have time to do at Rafael. Mr. Rabie stated that the only papers or documents which Partom took back to Israel with him when he left were his own private papers and perhaps one copy of the unclassified M-9 Division Quarterly Report which is obtainable to the general public. Mr. Wackerle advised that he mailed a copy of Dr. Partom's SHIN computer code to his Israeli address after Partom left.

Mr. Rabie advised that they were advised by Mr. Sprouse, OC-10, September 20 that Partom's visit had been denied. On September 20 they found an office for Partom in the city of Los Alamos and moved him there so he could complete his project. They stated that Partom came back on LANL property occasionally in order to get his personal property from the trailer where he had been originally placed by Rabie.

Rabie said that he sent a memo to his supervisor, Dr. Ludwig Gritzo, advising him of the situation with Partom's visit approval and that DOE Headquarters might disapprove the visit. He stated that he was entirely

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Exhibit K - K.2

up front with Dr. Partom about the problem of approval of his visit. He told him that his "staying or going" was being negotiated at DOE HQ. Rabie admitted that he reacted to the needs of the M-9 program and was making every attempt to keep him in the Los Alamos area. Rabie and Wackerle both claim that they always had the impression that DOE and LANL policy allowed for unclassified work to be done off-site between collaborators.

Rabie and Wackerle both believe that the main problems occurred when LANL administration sent an erroneous visit approval letter to Partom in July, 1988. They also stated that they were not formally advised by LANL management until October 5 that this formal written visit denial had been received at LANL. Rabie advised that he personally contacted Mr. Tom Thomas, DOE-AL Security Specialist, and discussed the situation with him. Rabie said he attempted to get the reason for the possible visit denial from Thomas, but Thomas did not know at this point in the conversation, they both began to speculate over the possible reasons for the Headquarters denial portion. He categorically denied even saying to Thomas that one possible reason was that DOE Headquarters people thought that Partom had access to classified material during previous visits.

Messrs. Rabie and Wackerle were both aware that Partom was in Albuquerque after he departed the Los Alamos area on October 7, 1988. They believe that he attended a meeting at the Sheraton Inn and was sight seeing from October 7-9, 1988. The meeting was an unclassified conference of the ARA which was being co-hosted by LANL & SNLA. They also think that he might have visited the DOE Atomic Museum on Kirtland which is open to the public.

Donald D. McIntyre
Director, Internal Security
and Intelligence Operations

UNCLASSIFIED

Exhibit L - L.1

United States Government

Department of Energy

memorandum

Albuquerque Operations Office

DATE: August 8, 1988

REPLY TO ATTN OF: SD:AJL

SUBJECT: Proposed Visit/Assignment of Communist-Bloc/Other Sensitive Country National(s) to the Sandia National Laboratories Albuquerque ~~(SNLA)~~.

TO: David B. Waller, Assistant Secretary for International Affairs and Energy Emergencies, IE-1, DOE HQ

Please find the attached letter, Form IA-473 and accompanying security plan proposing that the following foreign national(s) be approved for a visit or assignment to SNLA on the dates indicated.

Name(s)	Country of Citizenship	Proposed Date of Visit
Lee, Kyobok	South Korea	10-14-88
Ho, Shen-Yu	Taiwan	10-14-88
Partom, Yehuda	Israel	10-14-88
Rosenberg, Gideon	Israel	10-14-88
Kuo, Shau-Hern	Taiwan	10-14-88
Kim, Do Kyung	South Korea	10-14-88

Pursuant to an agreement between the office of the Deputy Assistant Secretary for Operations, DP-2.1, HQ, and the Albuquerque Operations Office (AL), our office does not provide any recommendations concerning approval/disapproval of these types of visits/assignments.

The AL Security Division has reviewed the attached SNLA Security Plan. The plan, as written, is sufficient to provide adequate protection of Department of Energy assets and Classified Information. Additional security measures may be implemented as the situation requires. AL is forwarding the attached visit/assignment request(s) to HQ for final approval/disapproval.

Donald D. McIntyre
Director
Security Division

scw:6-29/p004028-2

DOE F 1325.8

Exhibit L - L.2

UNCLASSIFIED

United States Government

Department of Energy

memorandum

Albuquerque Operations Office

DATE: 9-9-88

REPLY TO ATTN OF: SD:TJT

SUBJECT: Proposed Visit/Assignment of Communist-Bloc/Other Sensitive Country National(s) to the Sandia National Laboratories Albuquerque (SNLA)

TO: David B. Waller, Assistant Secretary for International Affairs and Energy Emergencies, IE-1, DOE HQ

Please find the attached letter, Form IA-473 and accompanying security plan proposing that the following foreign national(s) be approved for a visit or assignment to SNLA on the dates indicated.

Name(s)	Country of Citizenship	Proposed Date of Visit
Rosenberg, Gideon	Israel	October 12, 1988
Parton, Yehuda	Israel	October 12, 1988
Kim, Do Kyurg	Korea	October 12, 1988
Lee, Kyobok	Korea	October 12, 1988
Kuo, Shau-Hern	Taiwan	October 12, 1988
Ho, Shen-Yu	Taiwan	October 12, 1988

Pursuant to an agreement between the office of the Deputy Assistant Secretary for Operations, DP-2.1, HQ, and the Albuquerque Operations Office (AL), our office does not provide any recommendations concerning approval/disapproval of these types of visits/assignments.

The AL Security Division has reviewed the attached SNLA Security Plan. The plan, as written, is sufficient to provide adequate protection of Department of Energy assets and Classified Information. Additional security measures may be implemented as the situation requires. AL is forwarding the attached visit/assignment request(s) to HQ for final approval/disapproval.

Donald D. McIntyre

Donald D. McIntyre
Director
Security Division

acw:6-29/p004028-2

DOE . 1325.8

UNCLASSIFIED

Exhibit N - N.1

United States Government

Department of Energy

memorandum

Albuquerque Operations Office

DATE: January 12, 1989

REPLY TO ATTN OF: ISIO:DDM

SUBJECT: Record to the File on Interview of LANL Employee/Allen Graham

TO: File of Investigation of Israeli Foreign Visit to LANL

On 1/12/89, Mr. Harry Hill and I personally interviewed Mr. Allen Graham, LSNL, WX-4 Division, regarding his knowledge of the recent visit to LANL of Israeli National Ehud Ganani during the September - October 1988 time frame.

Mr. Graham advised that he was the host contact for Dr. Ganani's visit to LANL from September 8 thru October 7, 1988. He stated that he had requested Dr. Ganani's collaborative assistance on a project he was doing for the Air Force Aeronautical Laboratory (AFAL) dealing with rocket propellant characteristics. Mr. Graham stated that he had no intention of violating DOE or LANL policies or procedures in inviting Dr. Ganani to LANL. His primary interest was in getting Ganani to work with him to solve the problems with his project.

Mr. Graham stated that he was first aware of a problem with Ganani's visit on September 8 or 9 when Ganani went to the LANL badge office to get his visitor badge and was told that his visit was not approved and he could not enter LANL property. Graham advised that Ganani telephoned him and told him the situation. Graham advised that he felt bad about Ganani having spent a large amount of his own money to come to LANL from Israel and they would not be able to work on the project. So, he called Bill Sprouse and asked him if it would be proper to have Ganani work with him at his home, off-site. Sprouse told him he believed that it was circumventing the intentions of the DOE Order 1240.2. He also told Graham that there was still a possibility that the visit would be approved by DOE HQ.

Mr. Graham advised that he talked with his supervisor regarding the situation and then considered the options available. He decided to set Ganani up in his own garage, provide him with his personal computer and conduct sample experiments. In his mind, he did not feel he was in violation of either LANL or DOE policies regarding foreign visits. His opinion was that as long as Ganani did not enter LANL property, it was okay to have Ganani work off-site.

UNCLASSIFIED

Exhibit M - M.2

-2-

Mr. Graham advised that he had originally been put on to Dr. Ganani by Dr. Powell, a Professor at the University of California at Davis, California. He then recommended Ganani's use on the AFAL project to AFAL Contract Officer, Captain Mark Husband. Captain Husband told him that AFAL had no problem with having Ganani on the project. Mr. Graham stated that Dr. Ganani never came on LANL property, never had access to classified or sensitive data and never had access to LANL's computer banks. He catagorically denied that Ganani ever had his (Graham's) ICN password. All collaboration was on a basic physics level.

Donald D. McIntyre
ISIO

UNCLASSIFIED

EB-2905

Exhibit N - N.1

UNCLASSIFIED

Los Alamos National Laboratory is operated by the University of California for the United States Department of Energy under contract W-7405-ENG-36

TITLE: SURFACE-BURN MODEL FOR SHOCK INITIATION

AUTHOR(S): Yehuda Partom
Jerry Wackerle

SUBMITTED TO: Ninth Symposium (International) on Detonation
August 28 - September 1, 1989
Portland, OR 97217

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Los Alamos Los Alamos National Laboratory
Los Alamos, New Mexico 87545

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FORM NO 836 R4

UNCLASSIFIED

Exhibit N - N.2

PREFERRED SESSION FORMAT: General or specialist

SURFACE-BURN MODEL FOR SHOCK INITIATION*

Yehuda Partom
RAFAEL, P. O. Box 2250
Haifa, ISRAEL

Jerry Wackerle
Los Alamos National Laboratory
Los Alamos, NM 87545

Author to be contacted: Jerry Wackerle, MS P952, Los Alamos National Laboratory
Los Alamos, NM 87545

Numerous reaction-rate correlations and models have been proposed and used for the numerical hydrodynamic simulation of the shock initiation and detonation of heterogeneous explosives. Most models are included in two broad categories: bulk (or bulk-like) reaction and surface burning. Here we describe an investigation with a specific model of the latter type and present some evidence of the advantages of such models. Using a characteristic code, the model is calibrated for a granular TATB explosive and used to simulate a body of initiation data. The investigation is then extended to the treatment of mulitple-component explosives and the prediction of initiation properties of plastic-bonded TATB and particle-size effects.

In common with most initiation and detonation modeling, we represent the reacting explosive as a mixture of unreacted solid and mostly gas products. Reaction progress is defined in terms of the mass fraction of products, λ, and the reaction rate in terms of the material time derivative, $\dot{\lambda}$. The mixture equation state relates this state variable and pressure, specific volume and specific internal energy, $E(P, V, \lambda)$ to the state equations of the two components, $E_s(P_s, V_s)$ and $E_g(P_g, V_g)$ by assumed energy partition schemes, or so called mix rules. Again in common with most modeling, pressure equilibrium, $P_s = P_g = P$ and ideal mixing of specific volumes and energy $(1 - \lambda)V_s + \lambda V_g = V$ and $(1-\lambda)E_s + \lambda E_g = E$ are imposed. A fourth necessary mix role is chosen by the nature of the rate model. For bulk reaction, the solid and gas components are closely intermixed, and reactant-products thermal equilibrium is assumed. The surface-burn model implies an interface between hot products and relatively cool unreacted solid, and the common condition of isentropic response of the solid (except for the initial shock) is used.

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*Work performed under the auspices of the U. S. Department of Energy.

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Exhibit N - N.3

The surface-burn rate model refines that presented at the Seventh Detonation Symposium.[1] It supposes the explosive ignites around hot spots and, providing certain threshold conditions are met, a burning surface propagates outward into the unreacted explosive. The burning surface is driven by heat conduction and supported by the heat of reaction. It is mathematically formulated:

$$\dot{\lambda} = \frac{y \mathcal{V}_B}{(b/2)} \quad ,$$

where $\mathcal{V}_B$ is the burning surface speed, y is related to the surface area and shape and b is the explosive grain size.

In the previous work, a solution of the one-dimensional, time-dependent, heat conduction problem for the growth of a spherical hot spot concluded that the burn propagation speed is independent of the hot spot temperature and size (provided some threshold is attained) and depends on the solid temperature, T_s, alone. This work retains the previously derived Arrhenius form of the burn speed

$$\mathcal{V}_B = Z_B e^{-T_*/T_s} \quad ,$$

where T_* and Z_B are constants.

The previous study modeled the factor $y(\lambda)$ geometrically in terms of a spherical hole-burning topology. A subsequent investigation, using reaction-rate "data," revealed serious limitations with that assumption.[2] The present work empirically defines a burning topology function in terms of both current pressure and reaction progress, as two quadratic curves around a maximum at a mass fraction λ_1. This is defined

$$\lambda_1 = \frac{1}{2}(1 - \frac{P}{P_1}) \quad ,$$

where P_1 is a constant (typically 50 GPa). The factor is expressed:

$$y(\lambda, P) = 4(\lambda + \frac{1}{2} - \lambda_1)(\frac{1}{2} - \lambda + \lambda_1), \quad \lambda \le \lambda_1$$

$$y(\lambda, P) = (1 - \lambda)\frac{1 - 2\lambda_1 + \lambda}{(1 - \lambda_1)^2}, \quad \lambda \ge \lambda_1 \quad .$$

The form gives mostly outward- (hole-) burning topologies for low pressures and mostly inward- (grain-) burning at high pressures, which is consistent with experimental observation.

Exhibit N -

In a preliminary exercise, the above surface-burn model and an Arrhenius bulk reaction model are compared in calculating reaction zone shapes in the steady detonation of TATB. Established state equations are used for the explosive and rate constants adjusted to yield the observed 0.1-μs reaction zones typical of the explosive.[3] The bulk reaction calculation is quite sensitive to the solid specific heat (and shock temperature), and with plausible numbers the reaction zone is found to attain a maximum only after some substantial reaction, rather than having the monotonically decreasing dependence on λ that observation dictates. This results from the thermal equilibrium assumption imposing unrealistic densities on the gas products, which is not the case with alternative mix rule for surface burning, and thereby argues against the bulk burning approach.

A 1D reactive characteristic code has been devised to calibrate and test the surface-burn model.[4] The code employs the explicit differencing scheme and the "Shock Path Net" used previously in a study of elastic precursor decay in metals;[5] this problem had the same form of characteristic equations as for reactive flow, except the forcing function is dissapative (negative).

The rate is tested with data for 1.8-g/cm^3 superfine TATB.[3,6,7] Reaction-zone and explosive-wedge (Pop plot) data are used to establish the burn velocity constants. With $P_1 = 50$ GPa, and $b = 20$ μm, the values $T_v = 3800$K, $Z_B = 10.3$ mm/μs give reasonably good agreement with observation for these tests, with a small difference accountable by limitations in boundry conditions (then) available in the characteristics code.

With the above constants, a variety of initiation phenomena are simulated for 1.8-g/cm^3 TATB. Both sustained and short-shock input give pressure histories in substantial agreement with those observed with embedded manganin gauges[6] and the extended run distances observed in short-shock experiments.[7] Ramp-wave inputs gave reactive buildup histories consistent with those observed in other explosives; that is, little buildup occurs until the ramp steepens into a shock. Using a specific heat increasing in temperature (as observed at atmospheric pressure for TATB), the extended run distances for wedge experiments at reduced initial temperatures are reproduced.

The above model is inadequate to simulate particle-size effects and composite explosives, motivating the extension to a multicomponent model.[8] This is accomplished by considering the composite composed of several initial mass fractions, W_i, each with an associated self (or partial) mass fraction reacted λ_i'; $0 \leq \lambda_i' \leq 1$. Each component is considered to react individually, without interaction. With

$$\sum W_i = 1 \qquad \lambda = \sum \lambda_i = \sum W_i \lambda_i' \quad ,$$

the composite rate is

$$\dot{\lambda} = \sum W_i \dot{\lambda}_i' = \sum W_i y_i \frac{v_{B,i}}{(b_i/2)} \quad .$$

Exhibit N - N.5

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Each component has an individual set of burning topology and burning velocity constants, $P_{1,i}$, b_i, $T_{v,i}$ and $Z_{B,i}$ and different heats of reaction, but share a common average equation of state.

The multicomponent treatment is exercised in several model calculations, with good results. Calculations of the initiation properties of a hypothetical explosive-inert mixtures yield plausible increases in run distance to detonation with increased initial mass fraction of inert. Computation of two-explosive composites with relatively high and low burn velocities give reasonable decreases in run distances as the fraction of high-velocity component was increased. Calculations of a TATB-like explosive with various distributions of three different grain sizes about a common 20-μm average grain size show little change in Pop plot, indicating that the average grain size is a principal factor in the reaction rate.

To test against existing data, the model is used to simulate the Pop plot of PBX 9502 — a 1.89-g/cm^3, 95/5 weight percent mixture of TATB and Kel-F 800. The burning topology and burning velocity constants used for the explosive component, are those given above for 1.8-g/cm^3 TATB and the Kel-F is considered inert. Excellent agreement is obtained with the explosive-wedge data for PBX 9502.[7]

Simple variations in the parameter *b* and its distribution are not enough to model the "crossover in reaction rate" observed for TATB. At higher pressures, smaller particle-size explosives react faster than coarse grained explosive, and at lower pressure the order reverses. To model this, the concept of a temperature-dependent critical hot spot size for ignition is introduced.[8,9] We find that a linear relation in the logrithm of the critical size and T_s is found sufficient to model the Pop plot data for micronized TATB.

REFERENCES

1. Y. Partom, "A Void Collapse Model for Shock Initiation," in Seventh Symposium (International) on Detonation, (Office of Naval Research Report NSWC MP 82-334, 1987) p. 506.

2. Jerry Wackerle and Allan B. Anderson, "Burning Topology in the Shock-Induced Reaction of Heterogeneous Explosives" in Shock Waves in Condensed Matter (North Holland, 1983), p. 501.

3. W. L. Seitz et al., "Detonation Reaction Zone Studies on TATB Explosives," Eighth Symposium (International) on Detonation, (Office of Naval Research Report NSWC Report MP 86-194, 1988) p. 123.

4. Yehuda Partom, "Characteristics Code for Shock Initiation," Los Alamos National Laboratory Report LA-10773 (1986).

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Exhibit N - N.6

5. Y. Partom, "Elastic Precursor Decay Calculations," J. Appl. Phys., 59, 2916 (1986).

6. A. B. Anderson et al., "Shock Initiation of Porous TATB," in Seventh Symposium (International) on Detonation, (Office of Naval Research Report NSWC MP 82-334, 1981) p. 385.

7. W. L. Seitz, "Short Duration Shock Initiation of TATB," in Shock Waves in Condensed Matter (North Holland, 1983), p. 531.

8. Yehuda Partom, "Shock Initiation Modeling of Multicomponent Explosives," Los Alamos National Laboratory Report LA-10773-Addendum (in press).

9. Y. Partom, "Modeling the Crossover in Reaction Rate for Micronized TATB," in Shock Waves in Condensed Matter (North Holland, 1988) p. 535.

QUESTION 4. ACCORDINGLY TO GAO, ANOTHER ISRAELI CAME TO ONE OF THE LABS "TO WORK ON THE DETONATION OF A CERTAIN INSENSITIVE HIGH EXPLOSIVE"; GAO SAID THAT IN THIS CASE "WAS NEVER SENT IN TO DOE FOR ANY REVIEW"; AND YET ANOTHER ISRAELI (ACCORDING TO DOE DOCUMENTS REVIEWED BY GAO) PERFORMED WORK ON AN ASTROPHYSICS PROJECT THAT "RELATES VERY MUCH TO NUCLEAR WEAPONS PHENOMENOLOGY AND, IN FACT, HIS WORK HAS DEFINITE BENEFITS TO THE NUCLEAR WEAPONS BRANCH (AT A LAB) AND THAT IS WHY THEY WANTED HIM IN." WHEN ASKED BY SENATOR GLENN WHAT SPECIAL CONTROLS WERE IN PLACE FOR THESE VISITORS, THE GAO WITNESS REPLIED, "IN THESE CASES I FOUND NO HOST REPORTS, NO SECURITY PLANS, NO BACKGROUND CHECKS.

O PLEASE PROVIDE A FULL EXPLANATION OF THESE VISITS.

RESPONSE: GAO's response of December 20, 1988, to our request for information dated October 19, 1988, did not address these specific cases, although they are thought to be Israelis Partom and Ganani.

Enclosed is a copy of the report of the Los Alamos Investigative Committee concerning the visits of Partom and Ganani.

REPORT OF THE COMMITTEE INVESTIGATING RECENT ISRAELI VISITS

1. INTRODUCTION

In response to DOE inquiries concerning a recent GAO report on DOE management of foreign visits and, specifically, their allegation that two Israeli visitors are visiting the Laboratory without DOE approval, a task force was established on October 7 by Deputy Director Jackson [Ref. 1.]. The task force convened immediately with others to hear a chronology [Ref. 2.] presented by Sprouse and Robertson on the current interactions with Ehud Ganani and Yehuda Partom, the two Israelis in question. At this meeting, it was learned that Robert Cutter of DOE/ASDP/Security Affairs had verbally requested status on these two cases on an urgent basis to prepare testimony for October 11 by ASDP to Senator John Glenn. Preliminary information was gathered by Roger Perkins, the Committee chair, transmitted by phone at noon, and sent to Cutter by FAX [Ref. 3.] early in the afternoon. The Committee then conducted three interviews: one each with the hosts of the two Israelis, and one with Marti Browne, affiliate analyst of the Consultant and Affliate Services office [Ref. 4.]. The Committee also received other information by phone, conversation, and from files concerning specific details. From this information, findings were inferred and are presented below.

2. FINDINGS

It was determined that both Ganani and Partom were currently in Los Alamos and therefore explicit information was needed by the Committee. It was further determined that a third Israeli, Noam Sack, was not here and not expected to come for several months. No further comment will be made on the Sack case.

2.1 Ganani

2.1.1 Background

Ganani is a section leader at the Rafael Ballistics Center of the State of Israel Ministry of Defense Armament Development Authority in Haifa, Isreal. He has ten years of experience in understanding highly filled systems relating to solid rocket propulsion materials, and has an international reputation in this discipline. The U.S. Air Force Astronautics Laboratory (AFAL) is funding a lot of research on rocket propellants. Propellants have a tendency to demix when processed, and the problem increases exponentially as more energetic mixes are used. AFAL has a close relationship with Rafael and four Rafael scientists are currently working on this problem. Alan Graham, of group WX-4 of our Weapons Engineering Division, has AFAL funding to investigate the demixing problem but his current approach is not focused enough on what AFAL needs. The AFAL has recommended Ganani to Graham to get his research on track. [Ref. 5.]

2.1.2 Chronology

May 16: Letter Hecker to Waller, DOE, enclosing form IA-473 requesting approval of Ganani's assignment for intermittent visits from Sept 1, 1988 through August 31, 1989, as well as security plan and ISEC statement. [Ref. 6.]

July 1: Hill signs off on Ganani invitation request. [Ref. 7.]

August 5: CAS sends letter of offer to Ganani offering collaborator status effective Sept 1, 1988, contingent upon DOE approval. Letter specifically states that Ganani should not prepare to visit Laboratory until he is officially notified by his sponsor of DOE approval. [Ref. 7.]

Sept 8: Ganani arrives, hired on, reported to work at TA-8-30. [Graham interview]

Sept 8: Ganani signed agreement with CAS as a collaborator. Affliate worksheet shows advance of $3310 due to Ganani as of this date, with airfare from New York and rental car agreement both commencing on September 7. Ganani personally signed for $800 on September 8. [Refs. 7 and 8.]

Sept 8: Memo Norris to Sprouse, states that Ganani arrived in Los Alamos on September 7, with wife and two-month old daughter to arrive on Sept 22. [Ref. 7.]

Sept 8 or Sept 9: Ganani came to badge office to get his badge. Sprouse talked to him and told him that we did not have approval. Sprouse told Ganani to return to his residence and wait until his host was notified that the visit was approved. Graham admitted to Sprouse that he (Graham) had been on travel and had assumed that the visit was approved. He had had Ganani sign the collaborators agreement, not knowing that the visit was not approved. Browne of CAS also called and asked about approvals . Sprouse said he didn't know when we would get an approval. Browne said they had already signed a contract with Ganani. Sprouse told her that this should not have been done and Browne admitted that it had been a mistake. [Ref. 2.]

Sept 9: Graham has Ganani moved to his garage at his home and tells Ganani he may not set foot in the Lab until and unless DOE approval is received. Ganani continues to work at Graham's home until October 7. [Graham interview]

Sept 9: Sprouse called all divisions requesting Israeli assignments due on October 1 and told them that we were experiencing problems getting approvals for all Israelis. The divisions were asked to contact the Israelis and tell them not to come to Los Alamos. If they showed up anyway, they were to be told they cannot go to work. [Ref. 2.]

Sept 15: Memo to Tiedman from Salazar, OS-12, explaining potential problem in obtaining approval of three Israeli assignee requests and the fact that two (Ganani and Partom) are in Los Alamos. At the meeting with Robertson and Sprouse on October 7, Tiedman stated that he advised Gritzo and asked Robertson to work with WX. [Ref. 9.]

Sept 16 (approx): Verbal denials were received from DOE Hdqts on Ganani, Partom, and Sack. Loyola Salazar called divisions involved (Les Luehring, WX, and Dennis Erickson, M) and informed them of the denials and that the Israelis could not work on Government property. Sprouse told both Graham and Rabie that, in his view, to allow Ganani and Partom to continue working off Government property without DOE visit approval was technically beating the system. Sprouse indicated that eventual approval was still being considered by DOE Hdqts. [Ref. 2.]

Sept 20: By memo to Holliway, John Allen, WX-4 group leader, indicates that Ganani is here, working offsite, and that DOE approval is not required for him to work offsite. [Ref. 7.]

Sep 21: Thomas, DOE/AL, called Bill Sprouse stating that he suspected Sack, Ganani, and Partom were here on Laboratory property without DOE approval. [Ref. 10.]

Sept 21: Memo from Vrooman thru Tiedman to Hecker reviews the pending denial of the visits of Ganani, Partom, and Sack, without noting the arrival of Ganani and Partom in Los Alamos.[Ref. 5.]

Sept 27: FAX from T. K. Lau to Trujillo, OS-12, providing internal DOE documentation concerning the denial of the visit requests of Ganani and Partom, and the approval of the visit request on Partom's wife, Ilya, to work in ESS Division. [Ref. 11.]

Oct 3: Formal notification by Tiedman to Hill that Ganani visit request was disapproved by DOE. [Ref. 12.]

Oct 5: Sprouse called Graham to inform him that [verbal] formal denial of Ganani's visit had been received. Ganani took the call, it having been call-forwarded [confirmed from Graham's interview] from 5-0826 to Graham's home. Ganani stated that he was "going home" on Friday [Oct 7]. [Ref. 2.]

Oct 7: Robertson received request from Cutter for information concerning the three Israelis whose visits were disapproved (Ganani, Partom, and Sack). [Ref. 13.] It was decided that Perkins would respond concerning Ganani and Partom.

Oct 7: McClary verified that Ganani has made no accesses to the ICN. [Private communication to Perkins.]

Oct 7: FAX from Perkins to Cutter [Ref.3.]

Oct 7: Ganani's last day of work. Returns to his house in White Rock, departs Los Alamos for Albuquerque on October 9. Then he will return to Israel. [Graham interview]

2.1.3 Summary

Ganani was permitted to come to Los Alamos by negligence of host in assuming that DOE approval had been received. Approval had been requested on May 16, some 15 weeks before the visit was to commence. The assignment was for a sensitive country, but non-sensitive subject, and previous visits of Israelis had not been disapproved. However, our Office Procedures Manual explicitly states (Section OPM-3-3, page 4) that "Prior approval is required for all visits and assignments by foreign nationals to all facilities of the Laboratory. Thus, a violation of Laboratory policy and DOE Order (DOE 1240.2) has occurred.

A less definitive question is whether the host was justified in continuing to interact technically with Ganani after learning that the visit had not been approved, and then after further learning that the visit had been disapproved. The Committee believes that while this continuing interaction does not violate the letter of DOE Policy (DOE Order 1240.2) it does appear to violate the spirit of the policy. The Committee believes that this issue demands more explicit delineation.

2.1.4 Possible Security Concerns

Graham's research is supported by our internal supporting research and development program as well as by the AFAL. The research is seeking a basic understanding of the rheology of highly packed suspensions in viscous media, a set of conditions which can represent modern high energy explosives. The AFAL is supporting a more applied effort relating to optimizing the performance of high energy propellents and their preparation. This seems to be an area where technology transfer from Israel to the United States seems likely through interactions with people such as Ganani.

In the case of the present visit, it seems apparent that Ganani's interactions were restricted to those working on this project with Graham, and the information flow was largely one way, towards us. Graham made every effort at significant personal inconvenience to both complete the interaction while abiding with the letter of the rules. The interaction with Ganani, while unfortunate, was apparently handled with enough finesse that we have not completely jeopardized future interactions with him.

In summary, we have no evidence that the security interests of the United States have been harmed.

2.2 Partom

2.2.1 Background

This visit was Partom's third to LANL. He was a visiting staff member from October 1985 to October 1986, and he made a short visit during the summer of 1987. Partom is a deputy division leader at the Rafael Ballistics Center in Haifa, Isreal. According to Ron Rabie and Jerry Wackerle of group M-9 of our Dynamic Testing Division, Partom is an internationally recognized expert in the understanding of shock-induced decomposition, initiation, and detonation of heterogeneous explosives. Partom has developed a reaction rate model for high explosives called "SHIN." SHIN is a characterisitic code with several novel features that M-9 would like to use and compare to results using LANL codes. [Ref. 5.]

2.2.2 Chronology

June 14: Letter Hecker to Waller, DOE, enclosing form IA-473 requesting approval of Partom's assignment from Sept 12, 1988 through October 7, 1988, as well as security plan and ISEC statement. [Ref. 14.]

May 24: Erickson signs off on Partom invitation request. [Ref. 15.]

August 8: CAS sends letter to Partom offering supplement 2 collaborator status through Sept 30, 1989, contingent upon DOE approval. Letter specifically states (in error) that DOE approval has been received for work through October 7, 1988. Supplement accepted and signed by Partom on September 12. [Ref. 15.]

Sept 9: Sprouse called all divisions requesting Israeli assignments due on October 1 and told them that we were experiencing problems getting approvals for all Israelis. (This was general advice and not specifically directed at the Partom case, which based on the August 8 letter from CAS, had approval for visit starting in September.) The divisions were asked to contact the Israelis and tell them not to come to Los Alamos. If they showed up anyway, they were to be told they cannot go to work. [Ref. 2.]

Sep 12: Partom arrives, hired on, reported to work at TA-6-61. [Rabie interview and Ref. 16]

Sep 13 or 14: Partom attempts to get badge at badge office. Told that no approval has been received. [Rabie interview]

Sept 15: Memo to Tiedman from Salazar, OS-12, explaining potential problem in obtaining approval of three Israeli assignee requests and the fact that two (Ganani and Partom) are in Los Alamos. At the meeting with Robinson and Sprouse on October 7, Tiedman stated that he advised Gritzo and asked Robertson to work with WX [Ref. 9.]

Sept 16 (approx): Verbal denials were received from DOE Hdqts on Ganani, Partom, and Sack. Loyola Salazar called divisions involved (Les Luehring, WX, and Dennis Erickson, M) and informed them of the denials and that the Israelis could not work on Government property. Sprouse told both Graham and Rabie that, in his view, to allow Ganani and Partom to continue working off Government property without DOE visit approval was technically beating the system. Sprouse indicated that eventual approval was still being considered by DOE Hdqts. [Ref. 2.]

Sept 16: Memo Rabie to Browne requesting that Partom's fees for the period Sept 12 through Oct 7 be paid in that Partom believed his visit was approved in view of the August 8 letter from CAS. (Ref. 15.]

Sept 20: Memo from Rabie to Browne requesting payment of fees for the period Sep 19 through Oct 7 even though visit disapproved. The memo also states that Partom will be working for M-9 during this period but will not be working on Laboratory property or using Laboratory materials or facilities. [Ref. 15.]

Sept 20: Partom moved offsite to borrowed office of JOMAR Corporation, in downtown Los Alamos. Laboratory property borrowed for office consisted of desk, chair, phone set, and computer terminal.[Ref: Rabie interview]

Sep 21: Thomas, DOE/AL, called stating that he suspected Sack, Ganani, and Partom were here on Laboratory property without DOE approval. [Ref. 10.]

Sept 21: Memo from Vrooman thru Tiedman to Hecker reviews the pending denial of the visits of Ganani, Partom, and Sack, without noting the arrival of Ganani and Partom in Los Alamos. [Ref. 5.]

Sept 27: FAX from T. K. Lau to Trujillo, OS-12, providing internal DOE documentation concerning the denial of the visit requests of Ganani and Partom, and the approval of the visit request on Partom's wife, Ilya, to work in ESS Division. [Ref. 11.]

Oct 3: Formal notification by Tiedman to Gritzo that Partom visit request was disapproved by DOE. [Ref. 17.]

Oct 7: Robertson received request from Bob Cutter for information concerning the three Israelis whose visits were disapproved (Ganani, Partom, and Sack). [Ref. 13.] It was decided that Perkins would respond concerning Ganani and Partom.

Oct 7: McClary determined that Partom, for the period up to 29 September, had made 9 accesses to the ICN, all to Cray machines in the open partition. [Ref. 18.] McClary also stated that total Cray CPU time used approximated 30 minutes. [private communication to Perkins]

Oct 7: Browne admits that August 8 letter to Partom was in error in that no DOE approval existed. It was an honest mistake, due to confusion over approval of earlier visits, and the extension of the existing contract for the third fiscal year, FY89, for which no approval existed, and the current visit overlapped both fiscal years. [Browne interview, Oct 7]

Oct 7: FAX from Perkins to Cutter [Ref.3.]

Oct 7: Partom's last day of work. Departs Los Alamos on Oct 7. [Rabie interview]

2.2.3 Summary

Partom received a letter from CAS dated August 8 which indicated that DOE approval had been received. It was only on or about Sept 14, when Partom went to the Badge Office for a badge, that the error was discovered. Assuming approval was likely to come, M-Division allowed Partom to continue his work. When it became clear a couple of days later that the visit was disapproved, Parton was moved off-site on Sept 20. Clearly, a mistake was made in the letter of Aug 8 which indicated to Partom that approval was in hand. Acting in good faith, Partom clearly deserves payment for the visit whether or not he completed it. More serious is the relatively leisurely removal of Partom from the Laboratory premises when the lack of approval, followed by the knowledge of disapproval, became apparent. In fact, Partom was at work on-site for seven days, and therefore completed a minimum assignment during a period in which lack of approval turned into disapproval. Our only justification is that the situation was driven by the erroneous letter, and knowledge of the fact that this was Partom's third visit, following over a year of approved assignments during the previous two years. Additionally, we have the question raised in the Ganani case, namely is it skirting the intent of the rules to continue to interact with Partom off-site after learning that the visit had specifically been disapproved? The situation here is exacerbated by the fact that a Government-owned computer terminal was made available to Partom, as well as access permitted to the ICN. As noted above (2.1.3), OPM-3-3 explicitly states that "Prior approval is required for all visits and assignments by foreign nationals to all facilities of the Laboratory. Thus a violation of Laboratory and DOE policy and DOE Order has occurred. The issue of continuting to interact with Partom off-site after the lack of approval was noted is similar to that of the Ganani case.

It is noted again that the DOE visit approval determination required far more than the six-week lead time required by DOE policy. In this case, the request was submitted a full 13 weeks before the date of the proposed visit.

2.2.4 Possible Security Concerns

Wackerle's research is supported by the explosives development program of the DOE nuclear weapons RD&T program. The research is seeking a basic understanding of explosives behavior to better optimize all defense applications. In view of the expertise displayed by Partom's past visits, the present visit was planned to continue the comparison of Partom's code with our existing codes to see if our models could be improved to better conform to reality. Because this has continued to be a difficult area of research, with few experts involved, this exchange offers the prospect of technology transfer from Israel to the United States.

In the case of the present visit, through the security plan and subsequent removal of Partom to an off-site office, Partom's interactions were restricted to those working on this project, and the information flow was largely one way, towards us. The interaction with Partom, while unfortunate, was apparently handled with enough finesse that we have not completely jeopardized future interactions with him.

In summary, we have no evidence that the security interests of the United States have been harmed.

3. RECOMMENDATIONS

A. It is recommended that we improve dissemination of information concerning visit approval status. While advance advice by phone is appropriate, the written form issued by OS-12 constitutes the formal release to the host and the visitor that the assignment or visit requiring DOE approval can take place. Operationally, once a request for a visit or assignment has been submitted, the host organization should assume the visit or assignment has been "disapproved" until such time as the visit or assignment receives approval and the host has received written notification from OS-12 as discussed above. No invitations should be issued until the approval is received. Any visitor arriving in Los Alamos before approval has been received will not be permitted on-site and no information shall be shared with the visitor regarding the proposed or other Laboratory project or work product.

B. It is suggested that the Laboratory and DOE discuss and agree on the terms and conditions involving approvals or lack thereof. In particular, we believe that off-site interactions involving use of the ICN and communication media should continue to not require DOE approval. We need to agree on whether such interactions are permissible if the off-site location is Los Alamos or other nearby location. Also we need to agree on whether such interactions, if otherwise allowable, can be used as a fallback after a visit or assignment has been proposed and is still pending or rejected. The Committee believes the discussion should also review the impact of recent advances in message transmission services and ambiguities that have arisen in areas of UCNI and export-control information as they relate to our interactions with foreign nationals.

C. Recommendations A and B, when and if implemented, should be appropriately incorporated into our foreign visit and assignment procedures and the administrative manual updated accordingly.

D. The Laboratory should urge the DOE to respond to requests within the six week lead time, with approval, disapproval, or a candid discussion of the problems and likely delay expected in the more complicated cases. The consistently late approvals and continuing brinksmanship with respect to visits that often must be correlated with other activities does not promote good relationships with our foreign visitors. In addition there is a cost penalty associated with not being able to make travel plans well in advance with the expectation that they won't have to be cancelled at the last minute.

E. The Laboratory should acknowledge that some errors were made in these two cases and indicate that by taking the abbve steps, the probability of repetition is remote. The Committee further recommends that reprimands be issued to the host organizations for permitting the unapproved Ganani visit to occur, and in the case of the Partom visit, for being tardy in removing him from the site when disapproval occurred and for permitting off-site use of government facilities.

References.

1. Memo, Jackson to distribution, dated 10/11/88.
2. Memo, Robertson and Sprouse to file, dated 10/7/88.
3. FAX, Perkins to Cutter, dated 10/7/88.
4. Note, Perkins to file, dated 10/7/88, Interviews presented to Committee.
5. Memo, Vrooman to Hecker, dated Sept 21, with attachments.
6. Letter, Hecker to Waller, dated May 16, with attachments.
7. CAS file on Ganani, various dates.
8. Accounting records concerning Ganani visit.
9. Memo, Salazar to Tiedman, dated Sept 15.
10. Memo for the record from Sprouse, dated Sept. 28.
11. FAX, from Lau to Trujillo, dated Sept 27, containing internal DOE memoranda concerning potential Israeli visit approvals.
12. Memo, Tiedman to Hill, dated October 3. Attachments are contained in reference 11.
13. Telecon note from OS-DO, dated Oct 7.
14. Letter, Hecker to Waller, dated June 14.
15. CAS file on Partom, various dates.
16. Accounting records on Partom,
17. Memo, Tiedman to Gritzo, dated October 3. Attachments are contained in reference 11.
18. Note, McClary to Perkins, dated October 7.

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Ref. 1.

Los Alamos
Los Alamos National Laboratory
Los Alamos New Mexico 87545

memorandum

TO Distribution
DATE October 11, 1988
FROM James F. Jackson, DDJ
MAIL STOP TELEPHONE A101/7-4168
SYMBOL DDJ/88-131
SUBJECT ISRAELI VISITOR INVESTIGATION

This will confirm that, as of Friday morning, October 7, I have asked Roger Perkins, Bill Eklund, Patrick Trujillo, and Ron Rodriquez to constitute a committee, chaired by Roger Perkins, which is directed to investigate and report on the matter of the three Israelis (Partom, Ganani, Sacks) who have been denied approvals to visit the Laboratory. This committee will prepare a preliminary report to me by Wednesday, October 12. The committee will look into the question of whether any DOE security orders or directives have been violated, as well as other pertinent aspects of this matter.

WAE:sq

Distribution:
A. Tiedman, ADS, MS A120
R. Rodriquez, CONT/IEO, MS P274
W. Eklund, LC/GL, MS A183
J. P. Trujillo, HRD-1, MS P233
CRM-4 (2), MS A150
File (3)

ADS	
ADS DEPUTY	
ASST. ADS	
ADS BUDGET	
ADS ADMIN	
OTHER	10/11

Ref. 2.1.

On Thursday or Friday (September 8/9)

Ganani came to the Badge Office to get his badge. I talked to him and told him we did not have an approval on him and he was not supposed to be here. I asked where he was staying and he said in an apartment. I told him he should go there and wait until we notify his host of the approval. The next day, Alan Graham came to my office. I explained it all to him - that we do expect to get an approval - just late. He talked about having to do work for the both of them while waiting.

Alan's secretary Bonnie Norris called several times. At least one of them would call everyday and sometimes both would call.

Alan came to see me probably three times the first week of September.

Alan came to my office to ask what he could do to get the approval. I told him to just wait. He said he would talk to Sig if it would help. I asked him not to get into it - we were working it.

Alan, in my office, told me how concerned he was because they had made a few mistakes. He had been on travel and assumed Ganani was approved so he had him come. They also signed a contract with him. I asked how could they do that without approval. He said he just made a mistake not checking.

Marti (CAS) called about Ganani and asked about approvals. I said I didn't know when but we usually get approvals. She said they have already signed a contract with him. I said but you don't have approval - how could you do that. She said they had made a mistake.

Ref. 2.2.

On approximately September 9

I called all Divisions requesting Israeli assignments due on October 1 and told them that we were experiencing problems getting approvals for all Israelis. They should contact them and tell them not to come to Los Alamos if they were expecting them any time soon. If they showed up anyway, tell them they cannot go to work.

Approximately September 12

Alan said if it won't be too long, he could let him work in his garage. I said that's up to him; all I could tell him is that he does not have approval to be here. He said that he was concerned about paying him and that Colegate was going to pay Sack out of his pocket but he couldn't afford to.

Aleta called about approvals. She put Ron Raby on the phone and they were asking about approvals. I told them apparently there is a problem and that they may not be approved and if they were, there maybe some extra restrictions like being escorted while on DOE property and minimal contact with persons knowledgeable of weapons programs but we really didn't know yet. She called me back to clarify something and she got Ron on the phone and I explained again that they could not be here. Aleta thought they could pay them if they did the work not on Government property. I said I don't know about that; that is up to somebody in CAS, I guessed.

I told them to have Partom wait in his apartment and not come to work.

Marti had talked to Ron and called me to ask about payment for Partom and also asked that if he stayed somewhere else and did work for us, would

Ref. 2.3.

he need approval. I said not that I know of. She said she could not pay them (Ganani and Partom) unless she changes the request in the database to say no approval was needed. I told her she should not do that because DOE already knows about these requests and may check them and then she may be in trouble. I advised her to go to her boss or her/his boss and let them make the decision.

Approximately September 12 or 13

Marti called again to ask about approvals. I asked about the contract Alan said was signed because they have not been notified by us of the approval. She said that some mistakes were made and she was concerned about how to pay them and what should she do. I told her I couldn't tell her to pay them because they don't have approval to even be here. She said Ron and Alan were trying to get CAS to pay them and she asked me again how she could/should pay them. I again told her I couldn't and wouldn't tell her to pay them. That is not my field and that I didn't know what to tell her.

Next time I talked to her, she said she had and they were going to tell the host that they would have to request in writing and have it approved through their AD as she wouldn't be able to pay them.

Approximately September 14

Ron Raby called Loyola about Partom's approval. Ron was told by Loyola that we had no approval from security and that if he proceeded with the plan to have him work on non DOE property, he was circumventing the system and DOE will find out and you and your Division will have to answer to that.

Ref. 2.4.

Approximately on the same date, Marti, CAS, called Loyola in reference to payment. Loyola informed her that if Partom is working on non Laboratory property and there is a contract, OS has no control over the situation.

Approximately September 16

Verbal denials were received from DOE HQ on all three Israelis (Ganani, Partom, Sack). Loyola called the divisions involved (Les Luehring, WX and Dennis Erickson, M Division) and informed them of the denials and that the Israelis could not work on Government property.

Addendum

I don't ever remember anyone saying directly that Partom had signed a contract, but it was implied when talk of paying them came up.

Ron said something to the effect that he (Partom) had a visa and they (DOE) couldn't make him leave Los Alamos. I said you are right, they have just as much right to be here as anyone, but could not be on DOE property and work here on the subject matter in the request. Ron asked about subject matter away from DOE property. I said I think technically that's illegal too.

During these telephone conversations, both Ron and Alan were told by me that to be off DOE property and still work or collaborate on the same reason they had asked for was just technically beating the system and if DOE found out they would really frown at our requests from now on. And, I can't tell them to do that - it's trying to beat the system.

I told them I had heard of that happening, but I sure wouldn't try it. Besides, we may get approval yet.

Ref. 3.1.

Form AEC 321
(12-72)
AECM 0278

1. INSERT ABOVE, CLASSIFICATION, UNCLASSIFIED, OR OFFICIAL USE ONLY

2. MESSAGE CONTAINS WEAPON DA
(Enter Y (Yes) or N (No))
☐ YES ☒ NO

U.S. ATOMIC ENERGY COMMISSION

OUTGOING TELECOMMUNICATION MESSAGE

(See reverse side for instructions.)

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THIS DOCUMENT CONSISTS OF ______ PAGES
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FOR NORMAL USE | EMERGENCY USE ONLY
ACTION: ☐ Routine ☐ Priority ☐ Immediate ☐ FLASH
INFO: ☐ (4 Hrs.) ☐ (2 Hrs.) ☐ (1 Hr.) ☐ (ASAP)

5. TYPE OF MESSAGE *(Enter S, M, T, or B)*
☐ *Single Address*
☐ *Multiple Address*
☐ *Title Address*
☐ *Book Message*

FOR COMMUNICATION CENTER USE
MESSAGE IDENTIFICATION
NR:
DTG:

6. FROM
ROGER B. PERKINS
LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO 87545

7. OFFICIAL BUSINESS
____
(Signature of certifying official)
(TIME) ___ A.M. P.M.

8. DATE 10/7/88

9. TO
ROBERT J. CUTTER
DOE/WASHINGTON, D. C. (8-896-2155)

FAX 8-896-4688

CONFIRMATION 8-896-2155

UNCLASSIFIED/N O N W D/FAX

SEE THE 2 UNCLASSIFIED PAGES ATTACHED

COMMUNICATION CENTER ROUTING
69

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J. Jackson, DDJ, MS A101
A. Tiedman, ADS, MS A120
F. Baca, DOE/LAAO, MS A316
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CRMO, MS A150
R. Robertson, OS-DO, MS F729
File

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7-3535

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12. DOWNGRADING/DECLASSIFICATION STAMP *(If Required)*

13. STAMP CLASSIFICATION *(Classified Messages Only)*

14. RESTRICTED DATA, FRD, or NSI STAMP *(If Required)*

Ref. 3.2.

I have been asked by James F. Jackson to lead an investigation into the circumstances surrounding the visits of Ehud Ganani and Yehuda Partom. We were assigned this task at 9:30 a.m. today. My answers are therefore preliminary. We hope to have more complete information by the middle of next week.

Ehud Ganani

Background: Ganani is a section leader at Rafael with ten years of experience in understanding highly filled systems relating to solid rocket propulsion materials. He has an international reputation in this discipline. The U. S. Air Force Astronautics Laboratory (AFAL) is funding a lot of research on rocket propellant. Propellants have a tendency to demix when processed. This problem increases exponentially as more energetic mixes are used. AFAL has a close relationship with Rafael and four Rafael scientists are currently working on this problem. Alan Graham (Group WX-4 of our Weapons Engineering Division) has AFAL funding to investigate the demixing problem but his current approach is not focused enough on what AFAL needs. The AFAL has recommended Ganani to Graham to get his research on track.

Alan Graham has consulted with Ganani but this was to be Ganani's first visit to Los Alamos National Laboratory (LANL).

The paper work for Ganani's visit was submitted on May 16, 1988. The requested date of arrival was September 1, 1988.

Status: Has been working at host's home on a paper relating to behavior of solid rocket propulsion materials. Will depart this afternoon for Albuquerque and for Israel tomorrow. No access to the Los Alamos Integrated Computing System has been made. Word processing has been performed on a personal computer located at the host's home. This computer is a government-owned PC which has been properly checked out from the Laboratory.

Yehuda Partom

Background: This was Partom's third visit to LANL. He was a visiting staff member from October 1985 to October 1986, and he made a short visit during the summer of 1987. Partom is a Deputy Division Leader at Rafael. According to Ron Rabie and Jerry Wackerle, (Group M-9 of our Dynamic Testing Division) Partom is an internationally recognized expert in the understanding of shock-induced decomposition initiation and detonation of heterogeneous explosives. Partom has developed a reaction rate model for high explosive called "SHIN." SHIN is a characteristic code with several novel features that M-9 would like to use and compare to results using LANL codes.

The paperwork for Partom's visit was submitted on June 14, 1988. The requested date of arrival was September 12, 1988.

Ref. 3.3.

Status: My understanding, not personally verified with the host, is that Partom has been working off-site, using a borrowed office from the JOMAR Corporation. Work has continued along the lines of work done on earlier visits to the Laboratory in the area of understanding shock-induced decomposition, initiation and detonation of heterogeneous explosives. The work involves development of a computer model and code which the Laboratory would like to use for comparison with our own work. Partom has made a total of 9 accesses to the Integrated Computer Network, all being accesses to CRAY computers in the open partition. Partom is leaving town this afternoon.

Ref. 4.

INTERVIEWS CONDUCTED BY THE COMMITTEE
INVESTIGATING RECENT ISRAELI VISITS

1. Friday, October 7, 2:00 p.m.
    Jerry Wackerle, SM, M-9
    Ronald Rabie, Group Leader, M-9
    Dennis Erickson, Deputy Division Leader, M-DO

2. Friday, October 7, 3:00 p.m.
    Alan Graham, SM, WX-4
    Les Leuhring, Deputy Division Leader, WX-DO

3. Friday, October 7, 4:00 p.m.
    Marti Browne, Affilate Analyst, HRD-2

Ref. 5.1.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: Siegfried S. Hecker, DIR, MS A100
DATE: September 21, 1988
THRU: Allen J. Tiedman for
MAIL STOP/TELEPHONE: G729/5-2448
FROM: Robert S. Vrooman R.S. Vrooman
SYMBOL: ADS/ISEC-88
SUBJECT: ISRAELI SCIENTISTS: GANANI, PARTOM, AND SACK

You may wish to discuss the following situation with Secretary Salgado during your next trip to Washington.

It is our understanding from conversations with Charlie Curtis, Ron Rudolph, and Jay Stewart, of DOE Headquarters, that the requests for visits by the subject Israeli scientists will be denied. The ISEC staff has recommended approval and based on the information we have received so far, we do not believe that approval will have an unacceptable security impact on the Laboratory but, in fact, disapproval will have an adverse impact on progammatic efforts at Los Alamos National Laboratory.

The pertinent facts for each case are as follows:

Ehud Ganani:
Ganani is a section leader at Rafael with ten years experience in understanding highly filled sytems relating to solid rocket propulsion materials. He has an international reputation in this discipline. The U. S. Air Force Astronautics Laboratory (AFAL) is funding a lot of research on rocket propellant. Propellants have a tendency to demix when processed. This problem increases exponentially as more energetic mixes are used. AFAL has a close relationship with Rafael and four Rafael scientists are currently working on this problem. Alan Graham, WX-4, has AFAL funding to investigate the demixing problem but his current approach is not focused enough on what AFAL needs. The AFAL has recommended Ganani to Graham to get his research on track.

Alan Graham has consulted with Ganani but this will be Ganani's first visit to Los Alamos National Laboratory (LANL).

The paper work for Ganani's visit was submitted on May 16, 1988. The requested date of arrival is September 1, 1988.

Yehuda Partom:
This will be Partom's third visit to LANL. He was a visiting staff member from October 1985 to October 1986, and he made a short visit during the summer of 1987. Partom is a Deputy Division Leader at Rafael. According to Ron

Ref. 5.2.

Rabie and Jerry Wackerle, M-9, Partom is "head and shoulders" above the LANL staff in understanding shock-induced decomposition initiation and detonation of heterogeneous explosives. Partom has developed a reaction rate model for high explosive called "SHIN." SHIN is a characteristic code with several novel features that M-9 would like to use and compare to results using LANL codes.

The paperwork for Partom's visit was submitted on June 14, 1988. The requested date of arrival is September 12, 1988.

Noam Sack:
Sack is a professor of astrophysics at Hebrew University. This will be his fourth visit to LANL.

Sterling Colgate describes Sack as a very capable but not "first rate." Sack has provided some useful modeling of supernova hydrodynamics. Colgate has known Sack for a long time and has had no indication that he works on weapons hydrodynamics.

The paperwork for Sack's visit was submitted to the DOE on July 11, 1988. The requested date for arrival is September 19, 1988.

To summarize, we believe that these visits represent two cases where there is a significant weapons technology transfer to LANL and one case of a normal contribution to fundamental physics. We also believe that security awareness at LANL is very good and we will lose nothing classified or sensitive as a result of their visits. Denial of the visits will result in an adverse impact on these LANL programs as well as a possible adverse impact on national security. In all of the above cases we met the DOE time requirements. We were not notified of possible problems with the visits until we called DOE on September 6, 1988.

RSV:jb

Attachments: Complete DOE 1A-473 Forms for Ganani, Partom, and Sack

Cy, w/o attachments: CRM-4 (2), MS A120
ADS/ISEC File

57527

Ref. 5.3.

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

May 16, 1988

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Waller:

Enclosed is completed Form IA-473 requesting approval for the following assignment:

NAME: Ganani, Ehud

COUNTRY OF CITIZENSHIP: Israel

TYPE OF ASSIGNMENT: Consultant (Collaborator in Laboratory terminology) Intermittent visits from September 1, 1988 thru August 31, 1989.

REMARKS: This assignment will involve a sensitive country but will not involve a sensitive subject.

The research involved is totally unclassified. Required security controls will be in effect during the assignment. Laboratory personnel are advised of DOE requirements governing visits and assignments by foreign nationals by issuance of copies of DOE orders and directives, as issued. The Office Procedures Manual (Section 3.3) contains instructions to Laboratory personnel on all aspects of visits and assignments by foreign nationals as applicable to the Los Alamos National Laboratory.

This letter and enclosures are forwarded for your information and distribution to other Headquarters offices.

Sincerely,

Siegfried S. Hecker
Director

Enclosure - DOE Form IA-473
Security Plan and Maps
ISEC Letter

Cys: D. D. McIntyre, AL, w/enc., MS A906
H. Valencia, LAAO, w/o enc., MS A316
G. Hill, WX-DO, w/o enc., MS P945
J. Allen/A. Graham, WX-4, w/o enc., MS G787
R. Vrooman, ISEC, w/o enc., MS A122
CAS, w/o enc., MS P237
CRM-4 (2), w/enc., MS A150
OS-12, w/enc., MS B236

Ref. 5.4.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE May 6, 1988
IN REPLY REFER TO ISEC
MAIL STOP G729
TELEPHONE 505/665-1394
FTS/855-1394

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Waller:

Dr. Alan Graham, Group WX-4, is requesting permission to hire Dr. Ehud Ganani, an Israeli national, as a collaborator, on a U.S. Air Force funded program. The Air Force sponsor is aware of Dr. Ganani's work on rocket propulsion systems at Rafael and has no objection to having him on this unclassified project at Los Alamos.

Dr. Ganani was recommended to Mr. Graham by Mr. Robert Powell, University of California at Davis, who consults with Graham under the UC interaction program. Dr. Ganani worked for Mr. Powell as a postdoctoral employee.

Although this will be Ganani's first visit to Los Alamos, his professional and personal reputation suggests that the Lab will benefit from this visit.

ISEC recommends approval of this request.

Sincerely,

Robert S. Vrooman

Robert S. Vrooman
ISEC Officer

RSV:dmq

Cy: A. Graham, WX-4, MS G787
OS-12, MS B236
CRM-4 (2), MS A150
ISEC File

Ref. 5.5.

April 27, 1988

SECURITY PLAN

1. Name: Ehud Ganani, Nationality: Israeli.

2. Justification for Visit: Dr. Ganani will review and participate in ongoing transport phenomena research (unclassified project).

3. Responsible Employee: Alan L. Graham, WX-4, MS G787, 665-0827.

4. Itinerary
   Dates: September 1988
   Times: Normal working hours, 8:00 a.m.-6:00 p.m., Monday-Friday
   Locations of Assignment: TA-41, Bldg. 50 (transportable building outside security fence, see area map). TA-8, Bldg. 30 (outside security fence, see map).

   During his stay at the Laboratory, Dr. Ganani will visit the Otowi Building at TA-3, SM261, for administrative business and to access the cafeteria. He will also be accessing the library (unclassified areas only) at TA-3, SM207, in the course of his work.

5. Dr. Ganani will not have access to classified equipment, material, or information.

6. See attached maps.

7. Dr. Ganani will be briefed on areas he will be allowed to visit and work in, as well as the public access routes (West Road and State Road 4) on which he must travel.

8. All personnel will be alerted that a foreign visitor will be in the area.

9. Principal LANL personnel who will have contact with and escort the visitor on Laboratory property:
   Alan L. Graham, WX-4, 5-0827
   Rodney S. Thurston, WX-4, 7-7378

10. Any changes to this security plan will be submitted to the Personnel Security Section, Group OS-12, for review and approval at least 10 days before the date of the proposed visit.

John D. Allen, Group Leader WX-4

ALG/bln

Ref. 5.6.

U.S. DEPARTMENT OF ENERGY
Office of International Affairs

OMB Control No
1910-210

REQUEST FOR FOREIGN NATIONAL UNCLASSIFIED VISIT OR ASSIGNMENT

This form is authorized by the Department of Energy Organization Act (P.L. 95-91) and the Atomic Energy Act of 1954 (P.L. 83-703). The form must be completed for all visits involving sensitive countries, subjects and facilities and for all assignments. The Department of Energy (DOE) does not consider the data to be confidential. If more space is needed for any item, use the remarks/continuation section. PLEASE READ THE INSTRUCTIONS ON THE REVERSE SIDE BEFORE COMPLETING THIS FORM.

PART I: IDENTIFICATION *(To be completed by requester or agent acting on his/her behalf)*

1. Name of Requester *(Last, First, Middle)*: Ganani, Ehud

2. Country of Citizenship: Israel

3a. Date of Birth *(Mo, Da, Yr)*: 01-06-52

3b. Place of Birth *(City, State, Country)*: Haifa, Israel

4. Date of Request *(Mo, Da, Yr)*: 4/2[illegible]/88

3c. Passport Number: 2255095

3d. Expiration Date *(Mo, Da, Yr)*: 5/15/92

3e. Port of Entry: New York, New York

5. Knowledge of English *(Check one line for each column)*	Speaking Ability (a)	Comprehension (b)	Reading Ability (c)	Writing Ability (d)
(1) Fluently/Easily	X	X	X	X
(2) Not Fluently/Not Easily				
(3) None				

6a. Name and Address of Current Employer:
Rafael
P.O. Box 2250
Haifa 31202, Israel

6b. Name and Address of Place of Work *(if different from 6a)*:

6c. Kind of Business or Organization *(e.g. government, etc.)*: ket Propulsion

6d. Division, Department or Subunit You Work In: Propulsion Unit

6e. Position or Description of Duties: tion Head

6f. Field of Research: Rheology of Concentrated Suspensions

6g. Work Telephone and/or Telex No.: 04-706259

7a. Have you been in communication with anyone in DOE or an affiliated organization concerning this visit/assignment?
(1) ☒ Yes . . . *Answer 7b.* (2) ☐ No . . . *Skip to 8*

7b. Name, Address and Telephone, if possible, of Person:
Alan L. Graham, WX-4, MS G787
Los Alamos National Laboratory, Los Alamos, NM
667-7378 or 665-0827

8a. This request is for *(Check appropriate box)* (1) ☐ A Visit (2) ☒ An Assignment

8b. Organization(s) and Location(s) to be visited or assigned	8c. Desired date(s) of visit or assignment	8d. Subjects to be discussed at each location, or Statement of research in which you wish to be assigned
WX-4 Los Alamos National Laboratory	September 1, 1988 thru August 31, 1989	Transport phenomena in multiphase systems. Will not include access to sensitive subjects as defined in DOE Order 1240.2.

9. A brief description of your technical qualifications and experience in relation to your visit/assignment. *(If an assignment, include university/college training with degrees and dates conferred.)*

Published extensively in the area for over 10 years. Visiting faculty member at University of California at Davis.

10. Your visit/assignment will be on whose behalf?
(1) ☐ Educational Institution (2) ☐ Industry (3) ☐ Scientific or technical organization (4) ☐ Yourself
(5) ☐ Government (6) ☒ Other - Specify → Los Alamos

1 Is this visit/assignment part of any exchange program or international agreement?

(1) ☐ Yes . . . *Answer 11b* (2) ☒ No . . . *Skip to 12*

11b. State program or agreement Ref. 5.7.

Name and Address of financial sponsor if different from 6a

13a. *(For Assignments Only:)* Will you require an Exchange Visitor (J-1) visa?

(1) ☒ Yes . . . *Answer 13b*

(2) ☐ No . . . *Skip to 14*

13b. (1) Names, (2) Dates and places of birth, (3) Relationships and (4) Citizenship of family members who will accompany you or who may join you at a later date

Sarah Ganani, 7/30/52, Haifi. Israel, Wife, Israeli

PART II: VISIT/ASSIGNMENT DATA *(To be completed by requesting DOE office or contractc*

14. Justification of visit/assignment, including benefit to DOE program(s)

Dr. Ganani will review and participate in ongoing transport phenomena research in unclassified area at Los Alamos.

15a. Location of visit/assignment *(Give organizational unit and building number)*

TA-8, Building 30

15b. Name and telephone number *(including area code)* of (1) supervisor responsible for assignment, or (2) principal escort for visit

Alan L. Graham - (505) 665-0827

15c. Name and Telephone number *(incl. area code)* of cognizant program contact at DOE Headquarters

N/A, no DOE contract for X84G research

15d. Will visit/assignment require access to a secure area(s)?

(1) ☐ Yes . . . *State area(s) and nature of security interest within the area(s)* ↘

(2) ☒ No

Cost of visit/assignment to DOE

None (9604, X84G)

ame and title of requesting DOE Official or contractor

Siegfried S. Hecker, Director, LANL

17. Contract Number W-7405-ENG-36

18. Signature of Requesting DOE Official or Contractor

19. Date Signed *(Mo, Da, Yr)* 5/1/87

PART III: APPROVAL/DISAPPROVAL *(To be completed by approval authority)*

20. Visit/Assignment Request is (1) ☐ Approved (2) ☐ Disapproved

21. Limitations or restrictions, if any, or reasons for disapproval

22. Name

23. Title and Organization

24. Signature

25. Date Signed

PART IV: ADDITIONAL DATA

26. Concurrences Required or Desired

Remarks/Continuation

Copy 1 (white)-Approval Authority; Copy 2 (blue)-DOE Office of International Affairs, Copy 3 (green)-DOE Office of Defense Programs
Copy 4 (yellow)-Cognizant DOE Program Office; Copy 5 (pink)-Cognizant DOE Operations Office/National Laboratory; Copy 6 (orange) Requester

A-473 (11-85)

Ref. 5.8.

Los Alamos
Los Alamos National Laboratory
Los Alamos,New Mexico 87545

June 14, 1988

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr Waller:

Enclosed is completed Form IA-473 requesting approval for the following assignment:

NAME: Partom, Yehuda

COUNTRY OF CITIZENSHIP: Israel

TYPE OF ASSIGNMENT: Consultant (Collaborator in Laboratory terminology) From September 12, 1988 thru October 7, 1988.

REMARKS: This assignment will involve a sensitive country but will not involve a sensitive subject.

The research involved is totally unclassified. Required security controls will be in effect during the assignment. Laboratory personnel are advised of DOE requirements governing visits and assignments by foreign nationals by issuance of copies of DOE orders and directives, as issued. The Office Procedures Manual (Section 3.3) contains instructions to Laboratory personnel on all aspects of visits and assignments by foreign nationals as applicable to the Los Alamos National Laboratory.

This letter and enclosures are forwarded for your information and distribution to other Headquarters offices.

Sincerely,

Siegfried S. Hecker
Director

Enclosure - DOE Form IA-473
Security Plan and Maps
ISEC Letter

Cys: D. D. McIntyre, AL, w/enc., MS A906
H. Valencia, LAAO, w/o enc., MS A316
L. Gritzo, M-DO, w/o enc., MS P915
A. Anderson/J. Wackerle, M-9, w/o enc., MS P952
R. Vrooman, ISEC, w/o enc., MS A122
CAS, w/o enc., MS P237
CRM-4 (2), w/enc., MS A150
OS-12, w/enc., MS B236

JUN [illegible]

Ref. 5.9.

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE June 1, 1988
IN REPLY REFER TO ISEC
MAIL STOP G729
TELEPHONE 505/665-2394
FTS: 855-2394

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Waller:

The Reaction Science Group (M-9) of the Dynamic Testing Division (M) is requesting permission for Dr. Yehuda Partom, a leading Israeli researcher on modeling of explosive initiation and detonation, to visit for three weeks. This will be Partom's third visit to Los Alamos National Laboratory. He was a visiting staff member from October 1985 to October 1986, and he made a short visit during the summer of 1987. M-9's collaboration with Partom has been very beneficial for the DOE. Partom developed one of the few new detonation codes during his year-long stay. It is now used by M-9.

Dr. Partom's conduct while at Los Alamos has been professional and proper. There has been nothing to suggest a security problem.

ISEC recommends approval of this request.

Sincerely,

Robert S. Vrooman
ISEC Officer

RSV:jb:dmq

Cy: J. D. Wackerle, M-9, MS P952
OS-12, MS B236
CRM-4 (2), MS A150
ISEC File

Ref. 5.10/

SECURITY PLAN FOR ASSIGNMENT OF YEHUDA PARTOM

Los Alamos National Laboratory Group M-9 proposes to continue to retain Yehuda Partom, an Israeli National, as a Laboratory Affiliate, and to have him on assignment at Los Alamos during the period September 12 through October 7, 1988. His principal host will be Jerry Wackerle, Group M-9, Mail Stop P952, telephone (505)667-4477.

Our security Group OS-12 will issue Partom a red, picture, identification badge on his first day of work, and he will be required to wear it visibly (above the waist) while working on Laboratory property. This badge does not admit Partom to any security areas, but will provide admission to the Wellness Center and after-hours use of the Technical Library. Partom will relinquish the badge as part of his termination processing.

We expect Partom mostly to work normal hours for the 20 working days between September 12 and October 7. Evening work and some trading of weekend days for weekdays may occur. He will be located at TA-6, Building 61, Room 110. This is a small prefabricated building with a conference room, kitchen, comfort facilities, and six offices. It is located in a special uncleared area adjacent to the M-Division security area, and about two miles west of the Laboratory Administration Building in TA-3 (Map 1). In addition to the usual telephone, office furniture and supplies, Partom will be provided a computer terminal and a telephone-line connection that will allow him to do computations on the open (unclassified) Cray computers and the Central Computing Facility at TA-3.

Additional Laboratory facilities that Partom will visit will be limited to those required for administrative services, health maintenance, and attending unclassified seminars and talks relevant to his project. These facilities are all in TA-3, South Mesa site, and are indicated in Map 2. They include:

A. Building 490, Reception Center, for badging,

B. Building 261, the Otowi Building, for visits to Personnel Services, Payroll, Travel and the Cafeteria,

C. Building 409, Occupational Medicine, if such services are needed,

D. Building 1663, the Wellness Center, and

E. Building 207, the Technical Library.

Potential locations of meetings and seminars include:

F. Administration Building main auditorium, SM-43, Room 680 when open to public,

G. Study Center, SM-207, Rooms 216 and 218, when operated in unclassified mode,

H. Physics Auditorium, SM-215, Room 182,

I. Center for Materials Science Conference Room, SM-32, Room 134, and

J. T-Division Conference Room, SM-123, Room 121.

Ref. 5.11.

Partom's principal access to his work station and the TA-3 area will be back and forth along West Jemez Road, as indicated on the maps, and the various streets and parking lots serving the locations listed above. Although on Laboratory property, public access is allowed to all of these routes. Partom previously spent a year here and is familiar with all of the cited locations, and will not require escort. He will, of course, be denied access to security areas, and will be instructed to stay away from Laboratory nonsecurity areas that are not listed above and clearly are not open to the public.

Partom's principal contacts will be with members of Group M-9, all available at the mail stop and telephone given for Wackerle at the beginning of this document. Technical discussions may be with Allan Anderson, William Davis, Jerry Dick, Ron Rabie, Charles Forest and Steve Sheffield; Mary Ann Garcia and Marianna Vigil will have frequent contact for time reporting and secretarial services.

Additionally, Partom may have technical discussions with:

Name	Organization	Mail Stop	Phone Extension
James N. Johnson	T-1	B267	7-7580
Pier Tang	X-4	F664	7-3557
Howard Cady	M-1	C920	7-4992
James Travis	M-DO	P915	7-5653

Partom will be given access to only unclassified equipment, computer lines, data and reports. These reports will include the unclassified portions of the M-9 Group quarterly reports; otherwise the written material he will review will generally be open published material or manuscripts in preparation for publication.

Those in principal contact with Partom will be reminded to not discuss classified material with him. This is in effect reminding them of a more general rule, in that Partom will always be in open, unclassified areas, and in such locations we do not discuss classified material with anyone, whether they have a clearance or not.

Ref. 5.12.

U.S. DEPARTMENT OF ENERGY
Office of International Affairs

OMB Control
1910-2

REQUEST FOR FOREIGN NATIONAL UNCLASSIFIED VISIT OR ASSIGNMENT

This form is authorized by the Department of Energy Organization Act (P.L. 95-91) and the Atomic Energy Act of 1954 (P.L. 83-703). The form must be completed for all visits involving sensitive countries, subjects and facilities and for all assignments. The Department of Energy (DOE) does not consider the data to be confidential. If more space is needed for any item, use the remarks/continuation section. PLEASE READ THE INSTRUCTIONS ON THE REVERSE SIDE BEFORE COMPLETING THIS FORM.

PART I: IDENTIFICATION *(To be completed by requester or agent acting on his/her behalf)*

1. Name of Requester *(Last, First, Middle)*: PARTOM, Yehuda

2. Country of Citizenship: ISRAEL

3a. Date of Birth *(Mo, Da, Yr)*: 11/24/34

3b. Place of Birth *(City, State, Country)*: TEL-AVIV, ISRAEL

4. Date of Request *(Mo, Da, Yr)*: 5/12/88

3c. Passport Number: 2744753

3d. Expiration Date *(Mo, Da, Yr)*: 5/8/90

3e. Port of Entry: J.F.K. Airport

5. Knowledge of English *(Check one line for each column)*	Speaking Ability (a)	Comprehension (b)	Reading Ability (c)	Writing Ability (d)
(1) Fluently/Easily	X	X	X	X
(2) Not Fluently/Not Easily				
(3) None				

6a. Name and Address of Current Employer:
State of Israel Ministry of Defence
Armament Development Authority
Rafael Ballistics Center
Box 2250
Haifa, ISRAEL

6b. Name and Address of Place of Work *(if different from 6a)*:

6c. Kind of Business or Organization *(e.g. government, etc.)*: Government

6d. Division, Department or Subunit You Work In: Division 20

Title, Position or Description of Duties: Deputy Division Leader

6f. Field of Research: Shock Waves

6g. Work Telephone and/or Telex No.: 9-011-972-

7a. Have you been in communication with anyone in DOE or an affiliated organization concerning this visit/assignment?
(1) ☒ Yes . . . *Answer 7b.* (2) ☐ No . . . *Skip to 8*

7b. Name, Address and Telephone, if possible, of Person:
Jerry D. Wackerle, 505-667-4477
Group M-9, Los Alamos National Laborat
Los Alamos, NM 87545

8a. This request is for *(Check appropriate box)* (1) ☐ A Visit (2) ☒ An Assignment

8b. Organization(s) and Location(s) to be visited or assigned:
Los Alamos National Lab
Laboratory
Los Alamos, NM 87545
Assigned to Group M-9
(will work in uncleared
area)

8c. Desired date(s) of visit or assignment:
9/12/88
thru
10/7/88

8d. Subjects to be discussed at each location, or Statement of research in which you wish to be assigned:
Will continue collaboration in fundamental research on the shock-induced decomposition initiation and detonation of heterogeneous explosives. Investigations are centered on devising of theoretical models for hotspot behavior, incorporating models into continuum numerical hydrodynamic calculations and testing of models with M-9 experimental data.

9. A brief description of your technical qualifications and experience in relation to your visit/assignment. *(If an assignment, include university/college training with degrees and dates conferred.)*
B. Sc., M. Sc., D. Sc., Technion, Haifa, 1959, 1961, 1967, 1968/9, 1976/7:
Research associate, at Brown U. Eng. Dept., Providence, R. I.; 1970-present:
junct Prof. Technion, Mech. Eng.; 1961-present: Research Eng. at Rafael;197
of Explosives Dept; 1984-present Deputy Division Head. Visiting SM at
M-9, Oct 85 to Oct 86. Technical experience in: Shock-wave physics, comp
ional physics, impact dynamics, plastodynamics, terminal ballistics; has
authored or coauthored 54 journal papers in the
fir

10. Your visit/assignment will be on whose behalf?
(1) ☐ Educational Institution (2) ☐ Industry (3) ☐ Scientific or technical organization (4) ☐ Yourself
(5) ☒ Government (6) ☐ Other - Specify

11a. Is this visit/assignment part of any exchange program or international agreement?
(1) ☐ Yes . . . *Answer 11b* (2) ☒ No . . . *Skip to 12*

11b. State program or agreement Ref. 5.13.

Name and Address of financial sponsor if different from 6a

13a. *(For Assignments Only:)* Will you require an Exchange Visitor (J-1) visa?
(1) ☒ Yes . . . *Answer 13b*
(2) ☐ No . . . *Skip to 14*

13b. (1) Names, (2) Dates and places of birth, (3) Relationships and (4) Citizenship of family members who will accompany you or who may join you at a later date
Partom, Illya; 4/17/33, Egypt; Wife, ISRAEL

PART II: VISIT/ASSIGNMENT DATA *(To be completed by requesting DOE office or contractor)*

14. Justification of visit/assignment, including benefit to DOE program(s) Group M-9 has the fundamental modeli of the initiation and detonation of explosives as a major aspect of its missio The work is supported by National Security Programs, and is essential to progress in improved selection and tailoring of safer and more effective high explosives for Los Alamos applications. During his term as a long-term visiti staff member of Los Alamos Group M-9,(10/85 to 10/86 and subsequent visit in 1987), Partom advanced his "surface burning" model of heterogeneous explosives to one that effectively predicted the initiation and detonation behavior of

15a. Location of visit/assignment *(Give organizational unit and building number)*
Group M-9; TA-40, Bldg. 1 (Partom will work in a special uncleared area TA-6-61)

15b. Name and telephone number *(including area code)* of (1) supervisor responsible for assignment, or (2) principal escort for visit
J. D. Wackerle (505)667-4477

15c. Name and Telephone number *(incl. area code)* of cognizant program contact at DOE Headquarters
John Rudolph 8-233-3618

15d. Will visit/assignment require access to a secure area(s)?
(1) ☐ Yes . . . *State area(s) and nature of security interest within the area(s)*
(2) ☒ No

Cost of visit/assignment to DOE
0.00

Name and title of requesting DOE Official or contractor
S. Hecker, Director, Los Alamos

17. Contract Number
W-7405-ENG-36

18. Signature of Requesting DOE Official or Contractor

19. Date Signed *(Mo, Da, Yr)*

PART III: APPROVAL/DISAPPROVAL *(To be completed by approval authority)*

20. Visit/Assignment Request is (1) ☐ Approved (2) ☐ Disapproved

21. Limitations or restrictions, if any, or reasons for disapproval

22. Name	23. Title and Organization	24. Signature	25. Date Signed

PART IV: ADDITIONAL DATA

26. Concurrences Required or Desired
[illegible]

Remarks/Continuation (Continued from 14) practical explosives, particularly for
nsitive TATB compositions. The effective modeling of shock-induced re-
on rate is an important aspect of M-9 explosive characterization mission,
continued collaboration with Partom is of great benefit to this purpose.

Copy 1 (white)-Approval Authority; Copy 2 (blue)-DOE Office of International Affairs; Copy 3 (green)-DOE Office of Defense Programs;
Copy 4 (yellow)-Cognizant DOE Program Office; [illegible]

Ref. 5.14.

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

July 11, 1988

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Waller:

Enclosed is completed Form IA-473 requesting approval for the following assignment:

NAME: Sack, Noam

COUNTRY OF CITIZENSHIP: Israel

TYPE OF ASSIGNMENT: Consultant (Collaborator in Laboratory terminology) From September 19, 1988 to September 19, 1989.

REMARKS: This assignment will involve a sensitive country but will not involve a sensitive subject. Your records will reflect that Sack was previously approved from August 1, 1987 to August 1, 1988.

The research involved is totally unclassified. Required security controls will be in effect during the assignment. Laboratory personnel are advised of DOE requirements governing visits and assignments by foreign nationals by issuance of copies of DOE orders and directives, as issued. The Office Procedures Manual (Section 3.3) contains instructions to Laboratory personnel on all aspects of visits and assignments by foreign nationals as applicable to the Los Alamos National Laboratory.

This letter and enclosures are forwarded for your information and distribution to other Headquarters offices.

Sincerely,

Siegfried S. Hecker
Director

OPNS BR.
SD-
7/15/88
CHIEF
OPNS BR.
/ /
SD
DEPUTY DIR.
HOFFERTH
/ /
SD
DIRECTOR
McINTYRE
7/15/88

Enclosure - DOE Form IA-473
Security Plan and Map
ISEC Letter

Cys: D. D. McIntyre, AL, w/enc., MS A906
H. Valencia, LAAO, w/o enc., MS A316
G. I. Bell, T-DO, w/o enc., MS B210
S. Colgate, T-6, w/o enc., MS
R. Vrooman, ISEC, w/o enc., MS A122
CAS, w/o enc., MS P237
CRM-4 (2), w/enc., MS A150
OS-12, w/enc., MS B236

Ref. 5.15.

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE June 29, 1988
IN REPLY REFER TO ISEC
MAIL STOP G729
TELEPHONE 505/665-2394
FTS:855-2394

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Waller:

The Theoretical Astrophysics Group (T-6) is requesting intermittent visits for Noam Sack, An Israeli national, for the purpose of collaborating on research in stellar collapse. Dr. Sack has visited Los Alamos many times and there has not been anything in his conduct to suggest a security problem.

His host Stirling Colgate, does classified research on half-time basis. He has, however, received many security briefings, is security conscious, and knows where to draw the line. The security plan for Sack's visit is completely adequate.

ISEC recommends approval of this request.

Sincerely,

Robert S. Vrooman

Robert S. Vrooman
ISEC Officer

RSV:jb

Cy: Stirling A. Colgate, T-6, MS B275
OS-12, MS B236
CRM-4 (2), MS A150
ISEC File

An Equal Opportunity Employer/Operated by University of California

Ref. 5.16.

6/15/88

Security Plan for Noam Sack, T-6 Collaborator

1.	Name, Nationality:	Noam Sack, Israel
2.	Host:	Stirling A. Colgate, T-6, MS B275, (505) 667-2897
3.	Badging Procedures:	The host will escort Dr. Sack to the Badge Office to receive badge upon arrival and will escort Dr. Sack to the Badge Office to return his badge upon his departure.
4.	Itinerary Dates & Times	Dates of assignment are Sept. 19, 1988 to Sept. 19, 1989. He will be expected to work during normal business hours of the Laboratory, 8 am to 5 pm, Monday through Friday. The anticipated dates of first visit are not known.
5.	Locations of Visit:	His room assignment may be TA-3, SM-123, Rm. 157. The exact room assignment cannot be determined at this time. Areas to be visited are TA-3, SM-123 (T-Division Building first floor), SM-207 (Study Center, first floor and second floor (during workshops)), SM-261 (Otowi Building, first floor and second floor), SM-40 (ESS-Div. Conference Room), SM-1553 (T-6 Astrophysics Trailer), SM-215 (Physics Div. Auditorium), SM-409 (Health Services, entire building), SM-490 (Badge Office),SM-403 (IGPP Conf. Room), SM-1690 (CNLS Building).
6.	Equipment:	Dr. Sack will not have access to classified equipment, material, or information (documents/discussions).
7.	Map:	A highlighted map of areas to be visited and routes to be followed is enclosed.
8.	Restriction Location:	Dr. Sack has been briefed on areas to be visited and routes of travel to be followed, and areas within the vicinity that he cannot visit.
9.	Informing of Personnel:	Appropriate personnel of buildings to be visited will be alerted in advance that Dr. Sack will be in the area.
10.	Contacts at Lab.:	Principal personnel who will have contact with Dr. Sack are listed on page 2. These individuals will be properly briefed and are cognizant of the classification of the subject matter to be discussed.

6/15/88

Ref. 5.17.

Stirling A. Colgate, T-6
Arthur N. Cox, T-6
Jack G. Hills, T-6
Wojciech H. Zurek, T-6
Richard I. Epstein, ESS-9
Kenneth Van Riper, X-6
France A. Cordova, ESS-9
Stuart A. Raby, T-8
Terrance J. Goldman, T-5
Emil Mottola, T-8
Geoffrey B. West, T-8
David Campbell, CNLS

11. Changes: Any changes to the submitted Security Plan will be forwarded to the Personnel Security Station, Group OS-12, for review and approval at least ten days prior to the date of visit.

Ref. 5.18.

U.S. DEPARTMENT OF ENERGY
Office of International Affairs

OMB Contrc
1910-

REQUEST FOR FOREIGN NATIONAL UNCLASSIFIED VISIT OR ASSIGNMENT

This form is authorized by the Department of Energy Organization Act (P.L. 95-91) and the Atomic Energy Act of 1954 (P.L. 83-703). The form must be completed for all visits involving sensitive countries, subjects and facilities and for all assignments. The Department of Energy (DOE) does not consider the data to be confidential. If more space is needed for any item, use the remarks/continuation section. PLEASE READ THE INSTRUCTIONS ON THE REVERSE SIDE BEFORE COMPLETING THIS FORM.

PART I: IDENTIFICATION *(To be completed by requester or agent acting on his/her behalf)*

1. Name of Requester *(Last, First, Middle)*: SACK, Noam NMN

2. Country of Citizenship: Israel

3a. Date of Birth *(Mo, Da, Yr)*: 4/18/28

3b. Place of Birth *(City, State, Country)*: Kemmitz, Germany

4. Date of Request *(Mo, Da, Yr*: 6/13/88

3c. Passport Number: 4027615

3d. Expiration Date *(Mo, Da, Yr)*: ---

3e. Port of Entry: Philadelphia, PA

5. Knowledge of English *(Check one line for each column)*	Speaking Ability (a)	Comprehension (b)	Reading Ability (c)	Writing Ability (d)
(1) Fluently/Easily	X	X	X	X
(2) Not Fluently/Not Easily				
(3) None				

6a. Name and Address of Current Employer

Hebrew University
Jerusalem, Israel

6b. Name and Address of Place of Work *(if different from 6a)*: same

6c. Kind of Business or Organization *(e.g. government, etc.)*: University

6d. Division, Department or Subunit You Work In: Physics

Title, Position or Description of Duties: Prof. of Physics

6f. Field of Research: Astrophysics

6g. Work Telephone and/or Telex No.: 972 2 584-727

Have you been in communication with anyone in DOE or an affiliated organization concerning this visit/assignment?
(1) ☒ Yes . . . *Answer 7b.* (2) ☐ No . . . *Skip to 8*

7b. Name, Address and Telephone, if possible, of Person

Stirling A. Colgate, T-6, MS B275
Los Alamos National Laboratory
Los Alamos, New Mexico (505) 667-2897

8a. This request is for *(Check appropriate box)* (1) ☐ A Visit (2) ☒ An Assignment

8b. Organization(s) and Location(s) to be visited or assigned

Los Alamos National
Laboratory
Los Alamos, NM

8c. Desired date(s) of visit or assignment

9/19/88
to
9/19/89
Intermittent
Visits

8d. Subjects to be discussed at each location, or Statement of research in which you wish to be assigned

Cooperative research in stellar collapse.

This assignment will not involve access to sensitive subjects as defined in DOE Order 1240.2.

9. A brief description of your technical qualifications and experience in relation to your visit/assignment. *(If an assignment, include university/college training with degrees and dates conferred.)*

M.S. Hebrew Univ., Jerusalem, Israel 1959
Ph.D. Hebrew Univ., Jerusalem, Israel 1965

Your visit/assignment will be on whose behalf?
(1) ☐ Educational Institution (2) ☐ Industry (3) ☐ Scientific or technical organization (4) ☐ Yourself
(5) ☐ Government (6) ☒ Other - *Specify* — Los Alamos National Laboratory

11a. Is this visit/assignment part of any exchange program or international agreement?
(1) ☐ Yes . . . *Answer 11b* (2) ☒ No . . . *Skip to 12*

11b. State program or agreement
Ref. 5.19.
none

Name and Address of financial sponsor if different from 6a
[illegible]

13a. *(For Assignments Only:)* Will you require an Exchange Visitor (J-1) visa?
B1 held
(1) ☐ Yes . . . *Answer 13b*
(2) ☐ No . . . *Skip to 14*

13b. (1) Names, (2) Dates and places of birth, (3) Relationships and (4) Citizenship of family members who will accompany you or who may join you at a later date
none

PART II: VISIT/ASSIGNMENT DATA *(To be completed by requesting DOE office or contractor)*

14. Justification of visit/assignment, including benefit to DOE program(s)

Dr. Sack is an expert on stellar core collapse and supernova explosions. He has published many papers on his numerical work in this field. Recently, he has also been working on models of propagating galaxy formation in the early universe. He interacts with astrophysicists at Los alamos in both of these fields and continues his numerical studies during his visits. His insights and knowledge of these problems and their modeling are valuable resources for his collaborators here.

15a. Location of visit/assignment *(Give organizational unit and building number)* Unclassified areas of:
SM-123, SM-1553, SM-40, SM-207,
SM-261, SM-403, SM-490, SM-409, SM-215, SM-1690

15b. Name and telephone number *(including area code)* of (1) supervisor responsible for assignment, or (2) principal escort for visit
Stirling A. Colgate (505) 667-2897

15c. Name and Telephone number *(incl. area code)* of cognizant program contact at DOE Headquarters
John E. Rudolph (202) 253-2967

Cost of visit/assignment to DOE
750 (travel, subsistence, rental car)

Name and title of requesting DOE Official or contractor
Siegfried S. Hecker, Director, Los Alamos National Laboratory

15d. Will visit/assignment require access to a secure area(s)?
(1) ☐ Yes . . . *State area(s) and nature of security interest within the area(s)*
(2) ☒ No

17. Contract Number
W7405-ENG-36

18. Signature of Requesting DOE Official or Contractor

19. Date Signed *(Mo, Da, Yr)*
7/7, 88

PART III: APPROVAL/DISAPPROVAL *(To be completed by approval authority)*

20. Visit/Assignment Request is
(1) ☐ Approved (2) ☐ Disapproved

21. Limitations or restrictions, if any, or reasons for disapproval

22. Name
23. Title and Organization
24. Signature
25. Date Signed

PART IV: ADDITIONAL DATA

28. Concurrences Required or Desired

Remarks/Continuation

Copy 1 (white)-Approval Authority; Copy 2 (blue)-DOE Office of International Affairs; Copy 3 (green)-DOE Office of Defense Programs; Copy 4 (yellow)-Cognizant DOE Program Office; Copy 5 (pink)-Cognizant DOE Operations Office/National Laboratory; Copy 6 (orange)-Requestor

A-473 (11-85)

Ref. 6.1.

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

May 16, 1988

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Waller:

Enclosed is completed Form IA-473 requesting approval for the following assignment:

NAME: Ganani, Ehud

COUNTRY OF CITIZENSHIP: Israel

TYPE OF ASSIGNMENT: Consultant (Collaborator in Laboratory terminology) Intermittent visits from September 1, 1988 thru August 31, 1989.

REMARKS: This assignment will involve a sensitive country but will not involve a sensitive subject.

The research involved is totally unclassified. Required security controls will be in effect during the assignment. Laboratory personnel are advised of DOE requirements governing visits and assignments by foreign nationals by issuance of copies of DOE orders and directives, as issued. The Office Procedures Manual (Section 3.3) contains instructions to Laboratory personnel on all aspects of visits and assignments by foreign nationals as applicable to the Los Alamos National Laboratory.

This letter and enclosures are forwarded for your information and distribution to other Headquarters offices.

Sincerely,

Siegfried S. Hecker
Director

Enclosure - DOE Form IA-473
Security Plan and Maps
ISEC Letter

Cys: D. D. McIntyre, AL, w/enc., MS A906
H. Valencia, IAAO, w/o enc., MS A316
G. Hill, WX-DO, w/o enc., MS P945
J. Allen/A. Graham, WX-4, w/o enc., MS G787
R. Vrooman, ISEC, w/o enc., MS A122
CAS, w/o enc., MS P237
CRM-4 (2), w/enc., MS A150
OS-12, w/enc., MS B236

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Ref. 6.2.

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE May 6, 1988
IN REPLY REFER TO ISEC
MAIL STOP G729
TELEPHONE 505/565-1394
FTS/855-1394

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Waller:

Dr. Alan Graham, Group WX-4, is requesting permission to hire Dr. Ehud Ganani an Israeli national, as a collaborator, on a U.S. Air Force funded program. The Air Force sponsor is aware of Dr. Ganani's work on rocket propulsion systems at Rafael and has no objection to having him on this unclassified project at Los Alamos.

Dr. Ganani was recommended to Mr. Graham by Mr. Robert Powell, University of California at Davis, who consults with Graham under the UC interaction program. Dr. Ganani worked for Mr. Powell as a postdoctoral employee.

Although this will be Ganani's first visit to Los Alamos, his professional and personal reputation suggests that the Lab will benefit from this visit. ISEC recommends approval of this request.

Sincerely,

Robert S. Vrooman
ISEC Officer

RSV:dmq

Cy: A. Graham, WX-4, MS G787
OS-12, MS B236
CRM-4 (2), MS A150
ISEC File

An Equal Opportunity Employer/Operated by University of California

Ref. 6.3.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

REQUEST FOR UNCLASSIFIED VISIT OR ASSIGNMENT BY A FOREIGN NATIONAL

This form must be completed for every unclassified visit or assignment by a foreign national to the Los Alamos National Laboratory. DOE Form IA-473 will also be required for (1) all assignments; (2) visits by nationals of sensitive countries; (3) visits involving access to sensitive subjects as defined in DOE Order 1240.2; and (4) visits by high-level foreign nationals.

PART I

1. Name *(Last, First, Middle)*: Ganani, Ehud
Title *(Individual's Position)*: Section Head
Dates *(in Los Alamos)*: Intermitt 9/1/88 to 8/31/89

2. Country of Citizenship: Israel
Request for: ☐ Visit ☒ Assignment
Will access to sensitive subjects *(DOE Order 1240.2)* be required? ☐ Yes ☒ No

3. Laboratory Contact *(Name)*: Alan L. Graham
Group and Organization Code: WX-4, 9604
Mail Stop: G787
Telephone: 5-0827

4. Locations *(Tech Areas & Bldgs.)*: TA-8, Bldg. 30 ☒ Unclassified ☐ Classified (Requires Form 864)

5. If Assignment, check appropriate box: ☐ LTVSM ☐ Temp Employee ☐ Reg Employee ☐ Student
☐ Alien Guest Scientist ☒ Collaborator ☐ Consultant ☐ Official Visitor ☐ Other ______

6. Justification *(Not required when Form IA-473 is used.)*

7. Payment Required *(VISIT ONLY. If yes, complete lines 7 thru 9.)*: ☒ Yes ☐ No
Cost Code: 9604
Program Code: X84G

8. Employer's Name: Rafael
Department: Propulsion Department

9. Employer's Address *(Street, City, State, ZIP, Country)*: P.O. Box 2250, Haifa 31201, Israel

APPROVALS

Group and Division Leader signatures below certify that required security controls will be in effect during the visit/assignment. When a security plan is required, the approving officials assure that (1) a prior inspection of the area to be visited will be performed to insure that any item which might disclose classified information has been removed; (2) signs will be posted in the area to be visited cautioning employees that an uncleared visitor is in the area; and (3) escort responsibilities and badging procedures will be reviewed by employees involved in the visit.

Group Leader	Date 4/27/88	Associate Director	Date
Division Leader	Date	Director	Date

PART II - REPORT

Visit

☐ Took Place ☐ Cancelled

Assignment

Action/Effective Date:		Termination/Effective Date:	
Entrance on Duty	☐ Will Not Report	☐ Completed Assignment	☐ Granted Leave of Absence
☐ Change in Status		☐ Acquired US Perm. Res. Status	☐ Other *(Specify)*

Form Number 982 (6. 85)

Ref. 6.4.

U.S. DEPARTMENT OF ENERGY
Office of International Affairs

OMB Control N
1910-21

REQUEST FOR FOREIGN NATIONAL UNCLASSIFIED VISIT OR ASSIGNMENT

This form is authorized by the Department of Energy Organization Act (P.L. 95-91) and the Atomic Energy Act of 1954 (P.L. 83-703). The form must be completed for all visits involving sensitive countries, subjects and facilities and for all assignments. The Department of Energy (DOE) does not consider the data to be confidential. If more space is needed for any item, use the remarks/continuation section. PLEASE READ THE INSTRUCTIONS ON THE REVERSE SIDE BEFORE COMPLETING THIS FORM.

PART I: IDENTIFICATION *(To be completed by requester or agent acting on his/her behalf)*

1. Name of Requester *(Last, First, Middle)*: Ganani, Ehud

2. Country of Citizenship: Israel

3a. Date of Birth *(Mo, Da, Yr)*: 01-06-52

3b. Place of Birth *(City, State, Country)*: Haifa, Israel

4. Date of Request *(Mo, Da, Yr)*: 4/27/88

3c. Passport Number: 2255095

3d. Expiration Date *(Mo, Da, Yr)*: 5/15/92

3e. Port of Entry: New York, New York

5. Knowledge of English *(Check one line for each column)*	Speaking Ability (a)	Comprehension (b)	Reading Ability (c)	Writing Ability (d)
(1) Fluently/Easily	X	X	X	X
(2) Not Fluently/Not Easily				
(3) None				

6a. Name and Address of Current Employer
Rafael
P.O. Box 2250
Haifa 31202, Israel

6b. Name and Address of Place of Work *(if different from 6a)*

6c. Kind of Business or Organization *(e.g. government, etc.)*: Rocket Propulsion

6d. Division, Department or Subunit You Work In: Propulsion Unit

6e. Title, Position or Description of Duties: Section Head

6f. Field of Research: Rheology of Concentrated Suspensions

6g. Work Telephone and/or Telex No.: 04-706259

7a. Have you been in communication with anyone in DOE or an affiliated organization concerning this visit/assignment?
(1) ☒ Yes . . . *Answer 7b.* (2) ☐ No . . . *Skip to 8*

7b. Name, Address and Telephone, if possible, of Person
Alan L. Graham, WX-4, MS G787
Los Alamos National Laboratory, Los Alamos,NM
667-7378 or 665-0827

8a. This request is for *(Check appropriate box)* (1) ☐ A Visit (2) ☒ An Assignment

8b. Organization(s) and Location(s) to be visited or assigned
WX-4
Los Alamos National
Laboratory

8c. Desired date(s) of visit or assignment
September 1, 1988
thru
August 31, 1989

8d. Subjects to be discussed at each location, or Statement of research in which you wish to be assigned
Transport phenomena in multiphase systems. Will not include access to sensitive subjects as defined in DOE Order 1240.2.

9. A brief description of your technical qualifications and experience in relation to your visit/assignment. *(If an assignment, include university/college training with degrees and dates conferred.)*

Published extensively in the area for over 10 years. Visiting faculty member at University of California at Davis.

9. Your visit/assignment will be on whose behalf?
(1) ☐ Educational Institution (2) ☐ Industry (3) ☐ Scientific or technical organization (4) ☐ Yourself
(5) ☐ Government (6) ☒ Other - *Specify* → Los Alamos National Lab

Ref. 6.5.
April 27, 1988

SECURITY PLAN

1. Name: Ehud Ganani, Nationality: Israeli.
2. Justification for Visit: Dr. Ganani will review and participate in ongoing transport phenomena research (unclassified project).
3. Responsible Employee: Alan L. Graham, WX-4, MS G787. 665-0827.
4. Itinerary
   Dates: September 1988
   Times: Normal working hours, 8:00 a.m.-6:00 p.m., Monday-Friday
   Locations of Assignment: TA-41, Bldg. 50 (transportable building outside security fence, see area map). TA-8, Bldg. 30 (outside security fence, see map).

   During his stay at the Laboratory, Dr. Ganani will visit the Otowi Building at TA-3, SM261, for administrative business and to access the cafeteria. He will also be accessing the library (unclassified areas only) at TA-3, SM207, in the course of his work.
5. Dr. Ganani will not have access to classified equipment, material, or information.
6. See attached maps.
7. Dr. Ganani will be briefed on areas he will be allowed to visit and work in, as well as the public access routes (West Road and State Road 4) on which he must travel.
8. All personnel will be alerted that a foreign visitor will be in the area.
9. Principal LANL personnel who will have contact with and escort the visitor on Laboratory property:
   Alan L. Graham, WX-4, 5-0827
   Rodney S. Thurston, WX-4, 7-7378
10. Any changes to this security plan will be submitted to the Personnel Security Section, Group OS-12, for review and approval at least 10 days before the date of the proposed visit.

John D. Allen

John D. Allen, Group Leader WX-4

ALG/bln

Ref. 7.1.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Human Resources Development Division

DATE: October 4, 1988
IN REPLY REFER TO: HRD-2-CAS
MAIL STOP: P237
TELEPHONE: (505) 667-6632

Supplement No. 1 to Collaborator Agreement No. COL-3233

Dr. Ehud Ganani
Propulsion Unit
RAFAEL
P. O. Box 2250
Haifa 31202, ISRAEL

Dear Dr. Ganani:

The Laboratory wishes to modify your Collaborator Agreement by extending the expiration date to September 30, 1989. Your visit to the Laboratory is contingent upon Department of Energy (DOE) approval. The Design Engineering Division is in the process of requesting DOE approval for your visit. Please do not prepare to visit the Laboratory until you have been officially notified by your sponsor of this approval. All other terms of the agreement remain unchanged.

Under the terms of this agreement the actual number of fee-paid days will be negotiated directly with you by your sponsoring organization, but may not exceed 130 fee-paid days in any agreement period.

If this is acceptable to you, please sign the original of this supplement and return it to this office; the second copy is for your records.

THE UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

K Joan Holliway

K. Joan Holliway
Consultant and Affiliate Services

Cy: WX-DO, MS P945
WX-4, MS G787
~~Files (2)~~

Supplement Accepted:

Collaborator

Date

An Equal Opportunity Employer/Operated by the University of California

Ref. 7.2.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO George G. Hill, WX-DO, MS P945

DATE October 3, 1988

FROM Allen J. Tiedman

MAIL STOP/TELEPHONE A120/7-9390

SYMBOL ADS-88-684A

SUBJECT DISAPPROVED ALIEN ASSIGNMENT

The Department of Energy has disapproved our assignment request for Ehud Ganani, Israeli, Collaborator, for intermittent visits from September 1, 1988 through August 31, 1989.

AJT/BS:mmt

Attachments:
1. Memo, Harold Jaffe, Director, IE-12, to Acting Deputy Assistant Secretary for Security Affairs, DP-30, dtd September 20, 1988
2. Memo, A. B. Siebert, Jr., and E. Q. Ten Eyck, to DP-343.4, dtd September 14, 1988
3. Foreign Visits and Assignments Routing Memo (Ganani, Ehud)

Cy: H. Valencia, LAAO, w/enc., MS A316
J. Allen/A. Graham, WX-4, w/enc., MS G787
R. Vrooman, ISEC, w/enc., MS G729
CAS, w/o enc., MS P237/
CRM-4, w/enc., MS A150
OS-12, w/enc., MS B236

Ref. 7.3.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO:	K. J. Holliway, HRD-2, MS P237	DATE:	September 20, 1988
THRU:	G. G. Hill, WX-DO, MS P945	MAIL STOP/TELEPHONE:	G787/7-7378
FROM:	J. D. Allen	SYMBOL:	WX-4
SUBJECT:	EHUD GANANI - FOREIGN NATIONAL		

Dr. Ehud Ganani, an Israeli Foreign National, has arrived in Los Alamos and has begun to render services for Alan Graham on the Macrostatistical Hydrodynamics project. He does not have DOE approval, but he does have a valid J-1 visa and a collaborator's agreement with the Laboratory. Dr. Ganani's contribution to the success of this project is already and will continue to be of such value that we intend to allow him to work off site and we intend to compensate him for his time and effort. We understand that Dr. Ganani is not allowed to enter Laboratory facilities or trespass on Laboratory property. We also understand that DOE approval is not required for him to work off site.

bln

Cy: G. G. Hill, WX-DO, MS P945
D. C. Nelson, WX-4, MS G787
R. S. Thurston, WX-4, MS G787
A. b. Graham, WX-4, MS G787

Cy: [illegible]

Ref. 7.4.

UNIVERSITY OF CALIFORNIA

Los Alamos National Laboratory

COLLABORATOR AGREEMENT
NO. COL-3233

This agreement by and between The Regents of the University of California, a California corporation, acting through the Los Alamos National Laboratory (hereinafter called "University"), and EHUD GANANI (hereinafter called "Collaborator") whose business address is

Propulsion Unit
RAFAEL
P. O. Box 2250
Haifa 31202
ISRAEL

WITNESSETH

WHEREAS, the University has entered into Contract W-7405-Eng-36 with the United States of America (hereinafter called "Government"), acting through the Department of Energy (hereinafter called "DOE"), providing for the performance of certain research and development work; and

WHEREAS, in furtherance of the performance of the work under said Contract W-7405-Eng-36, the University desires to utilize the expert advice and assistance of Collaborator in the field in which Collaborator has professional qualifications; and

WHEREAS, Collaborator is willing and able to perform such services under the terms and conditions of this agreement.

NOW, THEREFORE, the parties hereto do mutually agree as follows:

ARTICLE I - PERIOD OF SERVICE AND TERMINATION

A. The period during which services are to be rendered under this agreement shall be from September 1, 1988 through September 30, 1988 and may be extended upon the mutual consent of all parties hereto.

B. Either the University or the Collaborator may terminate this agreement at any time by giving the other party written notice of such action.

ARTICLE II - COMPENSATION

A. The University will pay the Collaborator the daily rate of **ONE HUNDRED EIGHTY-FOUR DOLLARS AND NO/100** ($*184.00*) for each day the Collaborator renders service hereunder~~including overtime in accordance with current Contract W-7405-Eng-36 travel regulations.~~ A full day of service means the amount of time which effectively interrupts the Collaborator's ordinary pursuits for substantially an entire day. Where parts of a day are involved and the Collaborator can follow his usual business or profession during the rest of the day the University will pay for the period of service approximating the number of hours Collaborator is kept from his normal pursuit. Under this daily rate type contract, payment for eight hours in any one day is the maximum.

B. The Collaborator shall furnish a claim or such other reasonable proof as the University may require setting forth actual time spent in the performance of service under this agreement.

C. Notwithstanding any other provisions of this agreement, University and Collaborator may from time to time agree in writing, without formal modification of the agreement, that Collaborator will not be paid a fee for certain days on which Collaborator renders service.

D. Fee-paid services may not exceed one hundred thirty (130) fee-paid days during a fiscal year.

ARTICLE III - CHARACTER AND EXTENT OF SERVICES

A. The Collaborator shall personally render expert advice and assistance (including reports) on such matters and at such point or points and for such periods as requested by the University and as are agreed to by the Collaborator in connection with the performance of Contract W-7405-Eng-36.

B. Whenever Collaborator is performing said services for the University under this agreement, Collaborator will observe and conform to all rules and regulations, including health and safety rules, of the Los Alamos National Laboratory which may then be in effect.

C. It is understood and agreed that Collaborator will not subcontract or otherwise employ anyone to do any of the work called for under this agreement without prior written approval of the University.

D. It is further understood and agreed that Collaborator has entered into this agreement as an independent contractor and that nothing in this agreement shall be construed as creating any other relationship between Collaborator and the University.

ARTICLE IV - TRAVEL

Travel expenses will be reimbursed from point of departure to point of return in accordance with the applicable travel regulations for Contract W-7405-Eng-36, on the submission by the Collaborator of a properly certified travel claim and such other reasonable proof as the University may require. Any changes in this original agreement must be approved in writing prior to commencement of travel.

ARTICLE V - SECURITY

A. Collaborator agrees to conform to all security regulations and requirements of DOE and to be responsible for safeguarding, in accordance with those regulations and requirements, all Restricted Data, Formerly Restricted Data, and other classified information, and protecting against sabotage, espionage, loss and theft of classified documents and material in Collaborator's possession in connection with the performance of work under this agreement. Upon completion or termination of this agreement, or at any time when requested by the University, Collaborator shall transmit to the University any classified matter in Collaborator's possession in connection with the work under this agreement.

B. The term, "Restricted Data", as used in this Article, means all data concerning (i) the design, manufacture, or utilization of atomic weapons; (ii) the production of special nuclear material; or (iii) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to Section 142 of the Atomic Energy Act of 1954.

C. The term "Formerly Restricted Data", as used in this Article, means all data removed from the Restricted Data category under Section 142 d. of the Atomic Energy Act of 1954, as amended.

D. Collaborator shall not permit any individual to have access to Restricted Data, Formerly Restricted Data, or other classified information, except in accordance with the Atomic Energy Act of 1954, as amended, and DOE's regulations and requirements.

E. Criminal Liability. It is understood that disclosure of Restricted Data, Formerly Restricted Data or other classified information relating to the work or services ordered hereunder, or failure to safeguard any Restricted Data, Formerly Restricted Data, or any other classified matter that may come to Collaborator or any person under Collaborator's control in connection with work under this agreement, may subject Collaborator, his agents, employees and subcontractors to criminal liability under the laws of the United States. (See the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011, 18 U.S.C. Sections 793 and 794; and Executive Order 11652.)

F. In the performance of the work under this agreement, the Collaborator shall assign classifications to all documents, material and equipment originated or generated by the Collaborator in accordance with classification guidance furnished to the Collaborator by DOE and the University.

Ref. 7. 6.

ARTICLE VI - PATENTS AND INFORMATION

A. Whenever any discovery or invention is made or conceived by Collaborator in the course of, or under the terms of this agreement, Collaborator shall furnish the University promptly with complete information thereon, and DOE shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title to and rights in and to any invention or discovery and any patent application or patent that may result. The judgment of DOE on such matters shall be accepted as final, and Collaborator agrees that Collaborator will execute all documents and do all things necessary or proper to carry out the judgment of DOE.

B. No claim for pecuniary award or compensation under the provisions of the Atomic Energy Act of 1954, as amended, shall be asserted by Collaborator with respect to any discovery or invention made or conceived in the course of or under this agreement.

C. Except as otherwise authorized in writing by DOE, Collaborator will obtain patent agreements to effectuate the purposes of Paragraphs A, B, and F of this Article VI from all persons who perform any part of the work under this agreement, except such clerical and manual labor personnel who will not have access to technical data.

D. With respect to any U.S. Patent Application filed by the Collaborator on any invention or discovery made or conceived in the course of this agreement, the Collaborator will incorporate in the first paragraph of the U.S. Patent Application the following statement:

> "The invention described herein was made in the course of, or
> under, a subcontract under Prime Contract W-7405-Eng-36 with
> the Department of Energy."

E. All drawings, sketches, designs, design data, specifications, notebooks, technical and scientific data, and all photographs, negatives, reports, findings, recommendations, data and memoranda of every description relating thereto, as well as all copies of the foregoing, relating to the work or any part thereof, shall be subject to inspection by the University and DOE at all reasonable times; and the Collaborator shall afford the University and DOE proper facilities for such inspection; and, further shall be the property of the Government and may be used by the Government for any purpose whatsoever without any claim on the part of the Collaborator for additional compensation and, subject to the Collaborator's right to retain a copy of said material where not classified (such retention to be subject to the security, patent and use of information provisions of this agreement), shall be delivered to the University or otherwise disposed of by the Collaborator, either as the University and/or Government may from time to time direct during the progress of the work or, in any event, as the University and/or Government shall direct upon completion or termination of this agreement.

F. It is recognized that during the course of the work under this agreement or thereafter, the Collaborator may from time to time desire to publish, within the limits of security requirements, information regarding scientific or technical developments made or conceived in the course of or under this agreement. In order that public disclosure of such information will not adversely affect the patent interests of DOE or the University, patent approval for release and publication shall be secured from DOE prior to any such release or publication.

G. Use of Information. Except as specifically authorized by this agreement, or as otherwise approved by the University, information and other data developed or acquired by, or furnished to, Collaborator in the performance of this agreement, shall be used by Collaborator only in connection with the work under this agreement.

H. Any information prepared for publication by Collaborator must be submitted to the University classification section for review and approval prior to publication.

ARTICLE VII - OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this agreement or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

ARTICLE VIII - EQUAL OPPORTUNITY

Unless this agreement is exempted under the rules and regulations of the Secretary of Labor issued under Section 204 of Executive Order 11246 of September 24, 1965, the contractual provisions prescribed by Section 202 of Executive Order 11246 are incorporated herein by reference.

ARTICLE IX - COVENANT AGAINST CONTINGENT FEES

Collaborator warrants that no person or selling agency has been employed or retained to solicit or secure this agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by Collaborator for the purpose of securing business. For breach or violation of this warranty, the University shall have the right to annul this agreement without liability or in its discretion to deduct from the agreement price or consideration or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE X - EXAMINATION OF RECORDS

The Collaborator agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under this agreement or of the time periods specified in Part 1-20 of the Federal Procurement Regulations (41 CFR Part 1-20), whichever expires earlier, have access to and the right to examine any directly pertinent books, documents, papers and records of the Collaborator involving transactions related to this agreement: provided, however, that this Article shall not apply unless this agreement exceeds $2,500.00. The periods of access and examination described herein shall continue until any disputes, appeals, litigation, claims or Comptroller General exceptions have been disposed of.

ARTICLE XI - ASSIGNMENT

The University reserves the right to assign all or any part of its interest in and to this agreement to the Government or to any agency or commission thereof. The Collaborator may not assign or transfer this agreement, any interest therein or claim thereunder without the prior written approval of the University.

ARTICLE XII - TAXES

The parties agree that the compensation stated herein includes all applicable taxes, and that the compensation will not be changed hereafter as the result of failure to include therein any applicable tax, or as the result of any change in the Collaborator's tax liabilities.

ARTICLE XIII - CONFLICT OF INTEREST

A. Collaborator affirms that to the best of his knowledge, there exists no actual or potential conflict between Collaborator's private interests (including corporate stockholdings) and his services under this agreement, and in the event of change in either his private interests or service under this agreement, Collaborator will raise with the University any question regarding possible conflict of interest which may arise as a result of such change.

B. Collaborator further affirms that he is not concurrently performing work on a full-time annual employment basis with any other organization under a cost-type contract with DOE.

Ref. 7.8.

IN WITNESS WHEREOF, the parties have executed this agreement.

Collaborator

B. Garani

Social Security Number

490-86-4651

Date Sep. 8, 1988

THE REGENTS OF THE
UNIVERSITY OF CALIFORNIA

By K Jean Holloway

Personnel Administration Division
Los Alamos National Laboratory

"Pursuant to Federal Privacy Act of 1974, you are hereby notified that disclosure of your social security number is mandatory. Disclosure of the social security number is required pursuant to Section 6011 and 6051 of Subtitle F of the Internal Revenue Code and Regulation 4, Section 404.1256, Code of Federal Regulations, under Section 218, Title II of the Social Security Act, as amended. The social security number is used to verify your identity. The principal uses of the number shall be to report payments and income taxes withheld to Federal and State governments."

Ref. 7.9.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: William Sprouse, OS-12, MS B236

DATE: September 8, 1988

FROM: Bonnie Norris bln

MAIL STOP/TELEPHONE: G787/7-7378

SYMBOL: WX-4

SUBJECT: ADDITIONAL INFORMATION ON FOREIGN NATIONAL

Ehud Ganani, a foreign national collaborator from Israel, arrived in Los Alamos on 9/7/88. His wife and daughter will arrive on 9/22/88. His daughter's name is May and she was born on 7/5/88 in Haifa, Israel. At the time of our request for Dr. Ganani's assignment, we supplied you with the information you required regarding his wife Sarah but we were unable to give you information regarding his unborn child.

Please contact me if you need additional information.

bln

Cy: J. D. Allen, WX-4, MS G787
D. C. Nelson, WX-4, MS G787
J. K. Holliway, HRD-2, MS P237
WX-4 Files

NSULTANT/AFFILIATE SERVICES
1988 SEP 12 AM 8 41

9/19 WX-4 will do memo re: pay

Ref. 7.10.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Human Resources Development Division

DATE:	August 5, 1988
IN REPLY REFER TO:	HRD-2-CAS
MAIL STOP:	P237
TELEPHONE:	(505) 667-6632

U.S. Immigration and Naturalization Service:

Dr. Ehud Ganani, a legal permanent resident of Israel, is a participant in the Los Alamos National Laboratory/University of California's Exchange Visitor Program, P-1-4702. He will be accompanied by the following family members during his stay in Los Alamos:

NAME	RELATIONSHIP	BIRTHDATE	BIRTHPLACE
Sarah Ganani	Wife	07/30/52	Haifa, ISRAEL
Infant Ganani	Unborn child		

Ref. 7.11.

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Human Resources Development Division

DATE: August 5, 1988
IN REPLY REFER TO: HRD-2-CAS
MAIL STOP: P237
TELEPHONE: (505) 667-6632

Dr. Ehud Ganani
Propulsion Unit
RAFAEL
P. O. Box 2250
Haifa 31202
ISRAEL

Dear Dr. Ganani:

Dr. George G. Hill, Design Engineering Division Leader, has requested that I contact you regarding your willingness to enter into an agreement with this Laboratory as a Collaborator at a daily fee of $184.00, effective September 1, 1988. Agreements are established on a fiscal year basis with the option for renewal at the beginning of the next fiscal year, October 1, 1988. Such services as you would be asked to render would be arranged at your convenience.

Enclosed are two copies of Agreement No. COL-3233. If this agreement meets with your approval, please sign the original and return it to this office; the second copy is for your records. Under the terms of this Agreement, the actual number of fee-paid days will be negotiated directly with you by your host Division, but may not exceed 130 fee-paid days in any Agreement period.

Subject to approval by your sponsoring organization, travel reimbursements will be made in accordance with the enclosed Reimbursement Policy. The policy governing subsistence payments was recently revised. Daily Travel Allowance payments (subsistence) will be made in accordance with the enclosed letter dated March 18, 1988, which addresses those revisions. Please note that you will be reimbursed for travel expenses from your U.S. Port of Entry to Los Alamos and return to your U.S. Port of Exit only. For additional information regarding reimbursements, please contact the Visitor Payment Section of the Travel Group at (505) 667-4138. For information regarding fee payments, contact the Payroll Group at (505) 667-4594.

Your visit to the Laboratory is contingent upon Department of Energy (DOE) approval. The Design Engineering Division is in the process of requesting approval from September 1, 1988 to September 1, 1989. Please do not prepare to visit the Laboratory until you have been officially notified by your sponsor of this approval.

This particular IAP-66 Form pertains only to your visit to Los Alamos. Appropriate visa arrangements should be made regarding visits to any other institutions before your appointment at Los Alamos begins.

Ref. 7.12.

Please call the Consultant and Affiliate Services Office at (505) 667-6632 if you have any questions regarding the details of this Agreement. Please call your Laboratory contact if you have any questions pertaining to travel arrangements or temporary living accommodations for your visit.

Sincerely yours,

K. Joan Holliway

K. Joan Holliway
Consultant and Affiliate Services

Enclosures: Agreement (2 copies)
Reimbursement Policy
Daily Travel Allowance Information
Tax Information
Visitor's Guide
IAP-66 Form

Cy: WX-DO, MS P945
WX-4, MS G787
~~Files (2)~~

Ref. 7.13. mc

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

CONSULTANT/AFFILIATE SERVICES
1988 JUL 27 AM 9 26

LABORATORY AFFILIATE REQUEST

E

TO: Consultant and Affiliate Services, MAIL STOP P237

Name (Last, First, Middle) Ganani, Ehud /ckt	Social Security Number 490-86-4651	Preferred Mailing Address ☐ Home ☐ Business
Home Address (Street, City, State, ZIP Code) 49 Einstein St., Haifa, Israel 34602		Telephone Number (Include Area Code) 972-42-52008
Employer RAFAEL	Position Title and Department Section Head, Propulsion Unit	
Business Address (Street, City, State, ZIP Code) P. O. Box 2250, Haifa 31202, Israel		Telephone Number (Include Area Code) 04-706259

Affiliate Category Requested
☐ **Consultant** ☒ **Collaborator** ☐ **Borrowed Personnel** ☐ **Industrial Staff Member** ☐ **Other**

Existing Affiliate or Contract Arrangements with DOE or other DOE Contractors (If yes, specify)
☐ Yes ☒ No

Former DOE Employee ☐ Yes ☒ No	Former Laboratory Employee ☐ Yes ☒ No	Retired Laboratory Employee ☐ Yes ☒ No	Date Employment Terminated
Former Laboratory Organization	Clearance Required ☐ Yes ☒ No	Badge Category ☐ I ☐ II ☐ III	DOE Clearance Number
Present DOE Clearance ☐ Yes ☒ No	Previous DOE Clearance ☐ Yes ☒ No	If yes to either, indicate Date of Birth	
Where Clearance was issued	Date Clearance was issued	Approval (DOE form IA-473 or Laboratory Form 982) ☒ Requested ☐ Obtained	
Citizenship ISRAEL	Country of Residence ISRAEL	Visa Held ☐ Yes ☒ No J-1 CAS Send	Type of Visa Held
Beginning Agreement Date 9-1-88	Ending Agreement Date 8-31-89	Approximate Date of First Visit 9-1-88	Anticipated Number of Service Days 124
Fee Status ☒ Yes ☐ No	Recommended Daily Fee $184 [illegible]	Affiliate's Usual Daily Fee to Others [illegible]	Available Funds ☒ Yes ☐ No
Travel Reimbursements ☒ Yes ☐ No	Subsistence Payments ☒ Yes ☐ No	Rental Car Reimbursements ☒ Yes ☐ No	Estimated Total Dollar Cost $63K

Description of services to be rendered
Dr. Ganani will review and participate in ongoing transport phenomena research in an unclassified area at Los Alamos.

Statement as to whether or not services are available within Laboratory
Dr. Ganani's expertise is not available at Los Alamos.

Statement of individual's relevant expertise and the organization's need for the agreement
Published extensively in the area for over 10 years. Did postdoctorate work at University of California at Davis.

Expertise Code
0308

Laboratory Contact Alan L. Graham	Group WX-4	Mail Stop G787	Telephone 5-0826	Cost Code 9604	Program Code R68R
Sponsoring Organization WX-4	Organization Cost Code 9604		Telephone 7-7378	Other Laboratory assignments, if any	

Sponsoring Organization (Signature)	Typed Name/Title John D. Allen/Group Leader	Date
Division or Center (Signature) EHGlassman for	Typed Name/Title G. G. Hill/Division Leader	Date 7/26/88
Associate/Assistant Director (Signature)	Typed Name/Title J. C. Hopkins/Associate Director	Date
Director's Office (Signature)		

Ref. 7.14.

[illegible]

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

AFFILIATE INVITATION REQUEST

PLEASE SEND ALL COPIES TO HRD-2, MS P237 FOR DISTRIBUTION

Date: 6-28-88
Cost Code: 9604
Program Code: X84G
Social Security Number: 490-86-4651

Affiliate's Name (Last, First, Middle): Ganani, Ehud /ckt
Title/Organizational Unit: Section Head, Propulsion Unit
Preferred Address (Official Visitors Only): [✓ Business] Home
Employer (Complete Name): RAFAEL
Business Address (Street, City, State, ZIP): P. O. Box 2250, HAIFA 31202, ISRAEL
Telephone Number (Include Area Code): 04-706259
Home Mailing Address (Street, City, State, ZIP): 49 Einstein St., Haifa, Israel 34602
Telephone Number (Include Area Code): 972 42 52008
Dates of Service: 9/9/88 to 10/6/88 ___ Intermittent
Services are to be rendered at: [✓ Los Alamos] Home Base Other (Specify) ___
Category (Check One): Official Visitor Consultant [✓ Collaborator] SARA Other (Specify) ___
Citizenship: ISRAEL
Foreign Nationals Only. DOE Approval (Form IA-473 or 982) has been: [✓ Requested (Date) 4/27/88] Granted (Date) ___
~~Visa type required~~ (For J-1, submit Form 1068): J-1
Visa type held:
Name of Contact(s): Alan L. Graham
Sponsoring Organization: WX-4
Telephone Number and Mail Stop: 7-7378, MS G787
Specific services to be rendered: Will review and participate in ongoing transport pheromena research.

AUTHORIZED PAYMENTS AND REIMBURSEMENTS

Travel reimbursement authorized: [✓ Yes] No
Travel reimbursement authorized From P.O.E. to Los Alamos to P.O.E.
Travel reimbursements authorized away from Los Alamos ___ To ___ To ___
Subsistence: ___ Yes ___ No
Rental Car (Local Transportation): [✓ Yes] No
Maximum travel, subsistence, rental car not to exceed $___
Official Visitor Category Only
Honorarium ___ Yes ___ No $___
Stipend (in lieu of transportation, subsistence, etc.) ___ Yes ___ No $___
AUTHORIZED SIGNATURE (Division, AD, DD, DIR)
Typed Name/Title: G. G. Hill, WX Division Leader
Date: 7/1/88
Comments:

FOR TRAVEL USE ONLY **Claim Number** ___

Received	Signature	Date

Form Number 910 (10/86)
CONSULTANT AND AFFILIATE SERVICES
ST-2624

[illegible]

8 arrived & DOE not here - can't work -
/95? group trying to solve

PLEASE DO NOT STAPLE THIS FORM

ASSURE THAT IMPRESSIONS ON
ALL COPIES ARE CLEAR

Ref. 7.15.
APPROVED OMB 3116-0008 EXP. 1/1/89

United States Information Agency
EXCHANGE VISITOR FACILITATIVE STAFF GC/V
CERTIFICATE OF ELIGIBILITY FOR EXCHANGE VISITOR (J-1) STATUS

A 1380489

1 GANANI (FAMILY NAME OF EXCHANGE VISITOR) EHUD (FIRST NAME) NMN (MIDDLE NAME) (X) Male ( ) Female

born 01 (Mo.) 06 (Day) 52 (Yr.) in Haifa (City) ISRAEL (Country)

a citizen of ISRAEL (Country) IS (Code) a legal permanent resident of ISRAEL (Country) IS (Code) whose position in that country is Chemical Engineer

Rafael 315 (Pos. Code) U.S. address

Los Alamos National Laboratory/University of California
P. O. Box 1663, Mail Stop P237, Los Alamos, New Mexico 87545

THE PURPOSE OF THIS FORM IS TO:

1 (X) Begin a new program (X) Accompanied by ___ immediate family members
2 ( ) Extend an on-going program
3 ( ) Transfer to a different program
4 ( ) Replace a lost form
5 ( ) Permit visitor's immediate family (2 members) to enter U.S. separately

2 will be sponsored by LOS ALAMOS NATIONAL LABORATORY/UNIVERSITY OF CALIFORNIA

to participate in Exchange Visitor Program No. P - 1 - 4702 which is still valid and is officially described as follows:

A program of the Los Alamos National Laboratory at Los Alamos, New Mexico, which provides a program for study and research in the physical, computer, biological and socio-environmental sciences and engineering disciplines for foreign nationals. The program also promotes the peaceful application of nuclear energy and in-depth collaboration on technical and scientific problems of international concern to promote the general interests of international exchange.

3 This form covers the period from 09 (Mo.) 03 (Day) 88 (Yr.) to 10 (Mo.) 14 (Day) 88 (Yr.) Students are permitted to travel abroad & maintain status (e.g. obtain a new visa) under duration of the program as indicated by the dates on this from.
If this form is for family travel or replaces a lost form, the expiration date on the exchange visitor's I-94 is

4 The category of this visitor is 1 ( ) Student, 2 ( ) Trainee, 3 ( ) Teacher, 4 (X) Professor, Research Scholar or Specialist, 5 ( ) International Visitor, 6 ( ) Medical Trainee, 7 ( ) Alien employee of the USIA. The Specific field of study, research, training or professional activity is 3190 (Sub/Field Code) verbally described as follows:
OLLABORATOR - Transport phenomena in multiphase systems.

5 During the period covered by this form, it is estimated that the following financial support (in U.S. $) will be provided to this exchange visitor by:

a (X) The Program Sponsor in item 2 above $ 6,500.00

This Program Sponsor has ☐ has not ☒ (check one) received funding for international exchange from one or more U.S. Government Agency(ies) to support this exchange visitor. If any U.S. Government Agency(ies) provided funding, indicate the Agency(ies) by code ___ ___ ___.

Financial support from organizations other than the sponsor will be provided by one or more of the following:

b1 ( ) U.S. Government Agency(ies) ______ (Agency Code) $ ______ b2 ______ (Agency Code) $ ______
c1 ( ) International Organization(s) ______ (Int. Org. Code) $ ______ c2 ______ (Int. Org. Code) $ ______
d ( ) The Exchange Visitor's Government $ ______
e ( ) The binational Commission of the visitor's Country $ ______
f ( ) All other organizations providing support $ ______
g ( ) Personal funds $ ______

(If necessary, use above spaces for funding by multiple U.S. Agencies or Intl. Organizations)

6 INS USE

7 K. Joan Holliway (Name of Official Preparing Form) Alternate Responsible Officer (Title)
Los Alamos National Laboratory/University of California
P. O. Box 1663, Mail Stop P237, Los Alamos, New Mexico 87545 (Address)
K Joan Holliway (Signature of Responsible Officer or Alternate R.O.) August 5, 1988 (Date)

PRELIMINARY ENDORSEMENT OF CONSULAR OR IMMIGRATION OFFICER REGARDING SECTION 212 (e) OF THE I.N.A.

I (Name)
(Title)
determined that the alien in the above program
is not subject to the two year residence requirement
is subject based on — A ( ) government financing and/or
B ( ) the Exchange visitor skills list and/or
C ( ) P.L. 94-484 as amended
The United States Information Agency reserves the right to make the final determination.
(Signature of Officer) (Date)

8. STATEMENT OF RESPONSIBLE OFFICER FOR RELEASING SPONSOR (FOR TRANSFER OF PROGRAM)

Date ______, Transfer of this exchange visitor from program No. ______ sponsored by ______ to the program specified in item (2) is necessary or highly desirable and is in conformity with the objectives of the Mutual Educational and Cultural Exchange Act of 1961.

(Signature of Officer) (Date)

IAP-66 (4-86)

Copy 1 - For Immigration and Naturalization Service

PAGE 1

Ref. 7.16.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Human Resources Development Division

DATE:	August 5, 1988
IN REPLY REFER TO:	HRD-2-CAS
MAIL STOP:	P237
TELEPHONE:	(505) 667-6632

U.S. Immigration and Naturalization Service:

Dr. Ehud Ganani, a legal permanent resident of Israel, is a participant in the Los Alamos National Laboratory/University of California's Exchange Visitor Program, P-1-4702. He will be accompanied by the following family members during his stay in Los Alamos:

NAME	RELATIONSHIP	BIRTHDATE	BIRTHPLACE
Sarah Ganani	Wife	07/30/52	Haifa, ISRAEL
Infant Ganani	Unborn child		

Ref. 7.17. 1187

WRITE IT DOWN
RECORD THE CONVERSATION
DOCUMENT THE FILE

Garoni - Dixon & Lillie

SUBJECT **DATE** 7/19

will [illegible] AR - 1A473 etc

to [illegible] [illegible]

will [illegible] [illegible] for [illegible] will [illegible]

a [illegible] [illegible] if possible for

[illegible]

7/20 [illegible]

has been at [illegible] - [illegible]

[illegible]

Call [illegible] current status [illegible]

1. [illegible] —

2. fee —

[illegible] 7378 call Lillie —

7/21 [illegible] mail [illegible]

7/[illegible] [illegible] done

SIGNED

Ref. 7.19

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

May 16, 1988

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

[illegible]

Dear Mr. Waller:

Enclosed is completed Form IA-473 requesting approval for the following assignment:

NAME: Ganani, Ehud

COUNTRY OF CITIZENSHIP: Israel

TYPE OF ASSIGNMENT: Consultant (Collaborator in Laboratory terminology) Intermittent visits from September 1, 1988 thru August 31, 1989.

REMARKS: This assignment will involve a sensitive country but will not involve a sensitive subject.

The research involved is totally unclassified. Required security controls will be in effect during the assignment. Laboratory personnel are advised of DOE requirements governing visits and assignments by foreign nationals by issuance of copies of DOE orders and directives, as issued. The Office Procedures Manual (Section 3.3) contains instructions to Laboratory personnel on all aspects of visits and assignments by foreign nationals as applicable to the Los Alamos National Laboratory.

This letter and enclosures are forwarded for your information and distribution to other Headquarters offices.

Sincerely,

Siegfried S. Hecker
Director

Enclosure - DOE Form IA-473
Security Plan and Maps
ISEC Letter

Cys: D. D. McIntyre, AL, w/enc., MS A906
H. Valencia, LAAO, w/o enc., MS A316
G. Hill, WX-DO, w/o enc., MS P945
J. Allen/A. Graham, WX-4, w/o enc., MS G787
R. Vrooman, ISEC, w/o enc., MS A122
CMS, w/o enc., MS P237
CRM-4 (2), w/enc., MS A150
OS-12, w/enc., MS B236

An Equal Opportunity Employer/Operated by University of California

Ref. 17.20

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

REQUEST FOR UNCLASSIFIED VISIT OR ASSIGNMENT BY A FOREIGN NATIONAL

This form must be completed for every unclassified visit or assignment by a foreign national to the Los Alamos National Laboratory. DOE Form IA-473 will also be required for (1) all assignments; (2) visits by nationals of sensitive countries; (3) visits involving access to sensitive subjects as defined in DOE Order 1240.2; and (4) visits by high-level foreign nationals.

PART I

1. Name *(Last, First, Middle)* Ganani, Ehud	Title *(Individual's Position)* Section Head	Dates *(in Los Alamos)* Intermitten 9/1/88 to 8/31/89

2. Country of Citizenship Israel	Request for ☐ Visit ☒ Assignment	Will access to sensitive subjects *(DOE Order 1240.2)* be required? ☐ Yes ☒ No

3. Laboratory Contact *(Name)* Alan L. Graham	Group and Organization Code WX-4, 9604	Mail Stop C787	Telephone 5-0827

4. Locations *(Tech Areas & Bldgs.)* ☒ Unclassified ☐ Classified (Requires Form 864)
TA-8, Bldg. 30

5. If Assignment, check [illegible] ☐ LTVSM ☐ Temp. Employee ☐ Reg. Employee ☐ Student
☐ Alien Guest Sc[illegible] ☒ Collaborator ☐ Consultant ☐ Official Visitor ☐ Other ____________

6. Justification (No[illegible]-473 is used)

7. Payment Required *(VISIT ONLY. If yes, complete lines 7 thru 9.)* ☒ Yes ☐ No	Cost Code 9604	Program Code X84G

8. Employer's Name Rafael	Department Propulsion Department

9. Employer's Address *(Street, City, State, ZIP, Country)*
P.O. Box 2250, Haifa 31201, Israel

APPROVALS

Group and Division Leader signatures below certify that required security controls will be in effect during the visit/assignment. When a security plan is required, the approving officials assure that (1) a prior inspection of the area to be visited will be performed to insure that any item which might disclose classified information has been removed; (2) signs will be posted in the area to be visited cautioning employees that an uncleared visitor is in the area; and (3) escort responsibilities and badging procedures will be reviewed by employees involved in the visit.

Group Leader	Date 4/27/88	Associate Director	Date
Division Leader	Date	Director	Date

PART II - REPORT

Visit
☐ Took Place ☐ Cancelled

Assignment

Action/Effective Date:		Termination/Effective Date:	
☐ Entrance on Duty	☐ Will Not Report	☐ Completed Assignment	☐ Granted Leave of Absence
☐ Change in Status		☐ Acquired US Perm. Res. Status	☐ Other *(Specify)*

Form Number 982 (6-85)

Ref. MV 7.21.

U.S. DEPARTMENT OF ENERGY
Office of International Affairs

OMB Control No.
1910-2100

REQUEST FOR FOREIGN NATIONAL UNCLASSIFIED VISIT OR ASSIGNMENT

This form is authorized by the Department of Energy Organization Act (P.L. 95-91) and the Atomic Energy Act of 1954 (P.L. 83-703). The form must be completed for all visits involving sensitive countries, subjects and facilities and for all assignments. The Department of Energy (DOE) does not consider the data to be confidential. If more space is needed for any item, use the remarks/continuation section. PLEASE READ THE INSTRUCTIONS ON THE REVERSE SIDE BEFORE COMPLETING THIS FORM.

PART I: IDENTIFICATION *(To be completed by requester or agent acting on his/her behalf)*

1. Name of Requester *(Last, First, Middle)*: Ganani, Ehud

2. Country of Citizenship: Israel

3a. Date of Birth *(Mo, Da, Yr)*: 1/6/52

3b. Place of Birth *(City, State, Country)*: Haifa, Israel

4. Date of Request *(Mo, Da, Yr)*: 4/27/88

3c. Passport Number: 2255095

3d. Expiration Date *(Mo, Da, Yr)*: 5/15/92

3e. Port of Entry: New York, New York

5. Knowledge of English *(Check one line for each column)*	Speaking Ability (a)	Comprehension (b)	Reading Ability (c)	Writing Ability (d)
(1) Fluently/Easily	X	X	X	X
(2) Not Fluently/Not Easily				
(3) None				

6a. Name and Address of Current Employer:
Rafael
P.O. Box 2250
Haifa 31202, Israel

6b. Name and Address of Place of Work *(if different from 6a)*:

6c. Kind of Business or Organization *(e.g. government, etc.)*: Rocket Propulsion

6d. Division, Department or Subunit You Work In: Propulsion Unit

6e. Title, Position or Description of Duties: tion Head

6f. Field of Research: Rheology of Concentrated Suspensions

6g. Work Telephone and/or Telex No.: 04-706259

e you been in communication with anyone in OE or an affiliated organization concerning this visit/assignment?
(1) ☒ Yes . . . *Answer 7b.* (2) ☐ No . . . *Skip to 8*

7b. Name, Address and Telephone, if possible, of Person:
Alan L. Graham, WX-4, MS G787
Los Alamos National Laboratory, Los Alamos,NM
667-7378 or 665-0827

8a. This request is for *(Check appropriate box)* (1) ☐ A Visit (2) ☒ An Assignment

8b. Organization(s) and Location(s) to be visited or assigned:
WX-4
Los Alamos National
Laboratory

8c. Desired date(s) of visit or assignment:
September 1,
1988
to
August 31,
1989

8d. Subjects to be discussed at each location, or Statement of research in which you wish to be assigned:
Transport phenomena in multiphase systems. Will not include access to sensitive subjects as defined in DOE Order 1240.2.

9. A brief description of your technical qualifications and experience in relation to your visit/assignment. *(If an assignment, include university/college training with degrees and dates conferred.)*

Published extensively in the area for over 10 years. Visiting faculty member at University of California at Davis.

visit/assignment will be on whose behalf?
(1) ☐ Educational Institution (2) ☐ Industry (3) ☐ Scientific or technical organization (4) ☐ Yourself
(5) ☐ Government (6) ☒ Other - Specify → Los Alamos National Laboratory

program or international agreement?

(1) ☐ Yes . . . *Answer 11b* (2) ☒ . . . *Skip to 12*

Ref. 7.22.

12. Name and Address of financial sponsor if different from 6a

(For Assignments Only:) Will you acquire an Exchange Visitor (J-1) visa?

(1) ☒ Yes . . . *Answer 13b*

(2) ☐ No . . . *Skip to 14*

13b. (1) Names, (2) Dates and places of birth, (3) Relationships and (4) Citizenship of family members who will accompany you or who may join you at a later date

1)
(1) Sarah Ganani, (2) 7/30/52, Haifa, Israel (3) Spouse
(4) Israeli
2) Unborn child who will be born by time of visit

PART II: VISIT/ASSIGNMENT DATA *(To be completed by requesting DOE office or contractor)*

14. Justification of visit/assignment, including benefit to DOE program(s)

Dr. Ganani will review and participate in ongoing transport phenomena research in unclassified area at Los Alamos.

15a. Location of visit/assignment *(Give organizational unit and building number)*

TA-8, Building 30

15b. Name and telephone number *(including area code)* of (1) supervisor responsible for assignment, or (2) principal escort for visit

Alan L. Graham - (505) 665-0827

15c. Name and Telephone number *(incl. area code)* of cognizant program contact at DOE Headquarters

N/A, no DOE contract for X84G research

15d. Will visit/assignment require access to a secure area(s)?

(1) ☐ Yes . . . *State area(s) and nature of security interest within the area(s)* ↘

(2) ☒ No

15e. Cost of visit/assignment to DOE

None (9604, X84G)

16. Name and title of requesting DOE Official or contractor

egfried S. Hecker, Director, LANL

tract Number

-7405-ENG-36

18. Signature of Requesting DOE Official or Contractor

19. Date Signed *(Mo, Da, Yr)*

PART III: APPROVAL/DISAPPROVAL *(To be completed by approval authority)*

20. Visit/Assignment Request is

(1) ☐ Approved (2) ☐ Disapproved

21. Limitations or restrictions, if any, or reasons for disapproval

22. Name

23. Title and Organization

24. Signature

25. Date Signed

PART IV: ADDITIONAL DATA

26. Concurrences Required or Desired

27. Remarks/Continuation

(e)-Approval Authority; Copy 2 (blue)-DOE Office of International Affairs; Copy 3 (green)-DOE Office of Defense Programs.
py 4 (yellow)-Cognizant DOE Program Office, Copy 5 (pink)-Cognizant DOE Operations Office/National Laboratory; Copy 6 (orange)-Requester

-473 (11-85)

Ref. 7.23.
April 27, 1988

SECURITY PLAN

1. Name: Ehud Ganani, Nationality: Israeli.
2. Justification for Visit: Dr. Ganani will review and participate in ongoing transport phenomena research (unclassified project).
3. Responsible Employee: Alan L. Graham, WX-4, MS G787, 665-0827.
4. Itinerary
   Dates: September 1988
   Times: Normal working hours, 8:00 a.m.-6:00 p.m., Monday-Friday
   Locations of Assignment: TA-41, Bldg. 50 (transportable building outside security fence, see area map). TA-8, Bldg. 30 (outside security fence, see map).

   During his stay at the Laboratory, Dr. Ganani will visit the Otowi Building at TA-3, SM261, for administrative business and to access the cafeteria. He will also be accessing the library (unclassified areas only) at TA-3, SM207, in the course of his work.
5. Dr. Ganani will not have access to classified equipment, material, or information.
6. See attached maps.
7. Dr. Ganani will be briefed on areas he will be allowed to visit and work in, as well as the public access routes (West Road and State Road 4) on which he must travel.
8. All personnel will be alerted that a foreign visitor will be in the area.
9. Principal LANL personnel who will have contact with and escort the visitor on Laboratory property:
   Alan L. Graham, WX-4, 5-0827
   Rodney S. Thurston, WX-4, 7-7378
10. Any changes to this security plan will be submitted to the Personnel Security Section, Group OS-12, for review and approval at least 10 days before the date of the proposed visit.

John D Allen
John D. Allen, Group Leader WX-4

ALG/bln

Ref. 7.24.

J-1 VISA FINANCIAL WORKSHEET

Exchange Visitor's Name Ganani Sponsoring Organization W4-4

Fee

24 days @ $ 184 $ 4416

Travel

POE to POE avg. $ 500

or

Designated location to Los Alamos ______ $ ______

Subsistence

24 days @ $ 69 ______

___ days @ $ ______ ______

___ days @ $ ______ ______

Subtotal $ ______ $ 1656

Rental Car

___ days @ $ ______

or

___ months @ $ ______ $ ______

TOTAL ~ $ 6500

ate 8/2 Name

09/23/86

Ref. 7.25 [illegible]

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: William Sprouse, OS-12, MS B236

THRU: George G. Hill, WX-DO, MS P945

DATE: April273, 1988

MAIL STOP/TELEPHONE: G787/7-7378

FROM: John D. Allen

SYMBOL: WX-4

SUBJECT: REQUEST FOR ASSIGNMENT OF FOREIGN NATIONAL

Enclosed are completed forms IA-473 and 982 requesting approval for the following assignment.

Name: Ehud Ganani

Country of Citizenship: Israel

Type of Assignment: Affiliate (Collaborator)

We have also enclosed a security plan and maps of the areas to be visited and the routes to be taken. This assignment will not involve sensitive subjects, and the research involved is totally unclassified.

bln

Enclosures: a/s

Cy: G. G. Hill, WX-DO, MS P945, w/encls
J. K. Holliway, HRD-2, MS P290, w/encls
WX-4 Files, w/encls

Ref. 7.26.
OMB Control No.
1910-2100

U.S. DEPARTMENT OF ENERGY
Office of International Affairs

REQUEST FOR FOREIGN NATIONAL UNCLASSIFIED VISIT OR ASSIGNMENT

This form is authorized by the Department of Energy Organization Act (P.L. 95-91) and the Atomic Energy Act of 1954 (P.L. 83-703). The form must be completed for all visits involving sensitive countries, subjects and facilities and for all assignments. The Department of Energy (DOE) does not consider the data to be confidential. If more space is needed for any item, use the remarks/continuation section. PLEASE READ THE INSTRUCTIONS ON THE REVERSE SIDE BEFORE COMPLETING THIS FORM.

PART I: IDENTIFICATION *(To be completed by requester or agent acting on his/her behalf)*

1. Name of Requester *(Last, First, Middle)*: Ganani, Ehud
2. Country of Citizenship: Israel

3a. Date of Birth *(Mo, Da, Yr)*:
3b. Place of Birth *(City, State, Country)*: Haifa, Israel
4. Date of Request *(Mo, Da, Yr)*: 4/27/88

3c. Passport Number: 2255095
3d. Expiration Date *(Mo, Da, Yr)*: 5/15/92
3e. Port of Entry: New York, New York

5. Knowledge of English *(Check one line for each column)*	Speaking Ability (a)	Comprehension (b)	Reading Ability (c)	Writing Ability (d)
(1) Fluently/Easily	X	X	X	X
(2) Not Fluently/Not Easily				
(3) None				

6a. Name and Address of Current Employer:
Rafael
P.O. Box 2250
Haifa 31202, Israel

6b. Name and Address of Place of Work *(if different from 6a)*:

6c. Kind of Business or Organization *(e.g. government, etc.)*: Rocket Propulsion
6d. Division, Department or Subunit You Work In: Propulsion Unit

6e. Title, Position or Description of Duties: ection Head
6f. Field of Research: Rheology of Concentrated Suspensions
6g. Work Telephone and/or Telex No.: 04-706259

e you been in communication with anyone in E or an affiliated organization concerning this sit/assignment?
(1) ☒ Yes . . . *Answer 7b.* (2) ☐ No . . . *Skip to 8*

7b. Name, Address and Telephone, if possible, of Person:
Alan L. Graham, WX-4, MS G787
Los Alamos National Laboratory, Los Alamos,NM
667-7378 or 665-0827

8a. This request is for *(Check appropriate box)* (1) ☐ A Visit (2) ☒ An Assignment

8b. Organization(s) and Location(s) to be visited or assigned:
WX-4
Los Alamos National Laboratory

8c. Desired date(s) of visit or assignment:
September 1, 1988
to
August 31, 1989

8d. Subjects to be discussed at each location, or Statement of research in which you wish to be assigned:
Transport phenomena in multiphase systems. Will not include access to sensitive subjects as defined in DOE Order 1240.2.

9. A brief description of your technical qualifications and experience in relation to your visit/assignment. *(If an assignment, include university/college training with degrees and dates conferred.)*

Published extensively in the area for over 10 years. Visiting faculty member at University of California at Davis.

sit/assignment will be on whose behalf?
(1) ☐ Educational Institution (2) ☐ Industry (3) ☐ Scientific or technical organization (4) ☐ Yourself
(5) ☐ Government (6) ☒ Other - *Specify* → Los Alamos National Laboratory

program or international agreement?

(1) ☐ Yes . . . *Answer 11b* (2) ☒ . . . . *Skip to 12*

Ref. 7.27.

12. Name and Address of financial sponsor if different from 6a

(For Assignments Only:) Will you require an Exchange Visitor (J-1) visa?

(1) ☒ Yes . . . *Answer 13b*

(2) ☐ No . . . *Skip to 14*

13b. (1) Names, (2) Dates and places of birth, (3) Relationships and (4) Citizenship of family members who will accompany you or who may join you at a later date

PART II: VISIT/ASSIGNMENT DATA *(To be completed by requesting DOE office or contractor)*

14. Justification of visit/assignment, including benefit to DOE program(s)

Dr. Ganani will review and participate in ongoing transport phenomena research in unclassified area at Los Alamos.

15a. Location of visit/assignment *(Give organizational unit and building number)*

TA-8, Building 30

15b. Name and telephone number *(including area code)* of (1) supervisor responsible for assignment, or (2) principal escort for visit

Alan L. Graham - (505) 665-0827

15c. Name and Telephone number *(incl. area code)* of cognizant program contact at DOE Headquarters

N/A, no DOE contract for X84G research

15d. Will visit/assignment require access to a secure area(s)?

(1) ☐ Yes . . . *State area(s) and nature of security interest within the area(s)* ↘

(2) ☒ No

15e. Cost of visit/assignment to DOE

None (9604, X84G)

16. Name and title of requesting DOE Official or contractor

Siegfried S. Hecker, Director, LANL

ntract Number

7405-ENG-36

18. Signature of Requesting DOE Official or Contractor

19. Date Signed *(Mo, Da, Yr)*

PART III: APPROVAL/DISAPPROVAL *(To be completed by approval authority)*

20. Visit/Assignment Request is

(1) ☐ Approved (2) ☐ Disapproved

21. Limitations or restrictions, if any, or reasons for disapproval

22. Name	23. Title and Organization	24. Signature	25. Date Signed

PART IV: ADDITIONAL DATA

26. Concurrences Required or Desired

27. Remarks/Continuation

te)-Approval Authority; Copy 2 (blue)-DOE Office of International Affairs; Copy 3 (green)-DOE Office of Defense Programs;
opy . . . llow)-Cognizant DOE Program Office; Copy 5 (pink)-Cognizant DOE Operations Office/National Laboratory; Copy 6 (orange)-Requester

A-473 (11-85)

Ref. 7.28.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

REQUEST FOR UNCLASSIFIED VISIT OR ASSIGNMENT BY A FOREIGN NATIONAL

This form must be completed for every unclassified *visit or assignment* by a foreign national to the Los Alamos National Laboratory. DOE Form IA-473 will also be required for (1) all *assignments*; (2) *visits* by nationals of sensitive countries; (3) *visits* involving access to sensitive subjects as defined in DOE Order 1240.2; and (4) *visits* by high-level foreign nationals.

PART I

1. Name *(Last, First, Middle)* Ganani, Ehud	Title *(Individual's Position)* Section Head		Dates *(in Los Alamos)* Intermitter 9/1/88 to 8/31/89
2. Country of Citizenship Israel	Request for ☐ Visit ☒ Assignment	Will access to sensitive subjects *(DOE Order 1240.2)* be required? ☐ Yes ☒ No	
3. Laboratory Contact *(Name)* Alan L. Graham	Group and Organization Code WX-4, 9604	Mail Stop G787	Telephone 5-0827

4. Locations *(Tech Areas & Bldgs.)* ☒ Unclassified ☐ Classified (Requires Form 864)
TA-8, Bldg. 30

5. If *Assignment*, check appropriate box ☐ LTVSM ☐ Temp. Employee ☐ Reg. Employee ☐ Student
☐ Alien Guest Scientist ☒ Collaborator ☐ Consultant ☐ Official Visitor ☐ Other ____________

6. Justification *(Not required when Form 1A-473 is used.)*

7. Payment Required *(VISIT ONLY. If yes, complete lines 7 thru 9.)* ☒ Yes ☐ No	Cost Code 9604	Program Code X84G
8. Employer's Name Rafael	Department Propulsion Department	

9. Employer's Address *(Street, City, State, ZIP, Country)*
P.O. Box 2250, Haifa 31201, Israel

APPROVALS

Group and Division Leader signatures below certify that required security controls will be in effect during the visit/assignment. When a security plan is required, the approving officials assure that (1) a prior inspection of the area to be visited will be performed to insure that any item which might disclose classified information has been removed; (2) signs will be posted in the area to be visited cautioning employees that an uncleared visitor is in the area; and (3) escort responsibilities and badging procedures will be reviewed by employees involved in the visit.

Group Leader	Date 4/27/88	Associate Director	Date
Division Leader	Date	Director	Date

PART II - REPORT

Visit

☐ Took Place ☐ Cancelled

Assignment

Action/Effective Date:		Termination/Effective Date:	
☐ Entrance on Duty	☐ Will Not Report	☐ Completed Assignment	☐ Granted Leave of Absence
☐ Change in Status		☐ Acquired US Perm. Res. Status	☐ Other *(Specify)*

Form Number 982 (6/85)

Ref. 7. 29.
April 27, 1988

SECURITY PLAN

1. Name: Ehud Ganani, Nationality: Israeli.

2. Justification for Visit: Dr. Ganani will review and participate in ongoing transport phenomena research (unclassified project).

3. Responsible Employee: Alan L. Graham, WX-4, MS G787, 665-0827.

4. Itinerary
   Dates: September 1988
   Times: Normal working hours, 8:00 a.m.-6:00 p.m., Monday-Friday
   Locations of Assignment: TA-41, Bldg. 50 (transportable building outside security fence, see area map). TA-8, Bldg. 30 (outside security fence, see map).

   During his stay at the Laboratory, Dr. Ganani will visit the Otowi Building at TA-3, SM261, for administrative business and to access the cafeteria. He will also be accessing the library (unclassified areas only) at TA-3, SM207, in the course of his work.

5. Dr. Ganani will not have access to classified equipment, material, or information.

6. See attached maps.

7. Dr. Ganani will be briefed on areas he will be allowed to visit and work in, as well as the public access routes (West Road and State Road 4) on which he must travel.

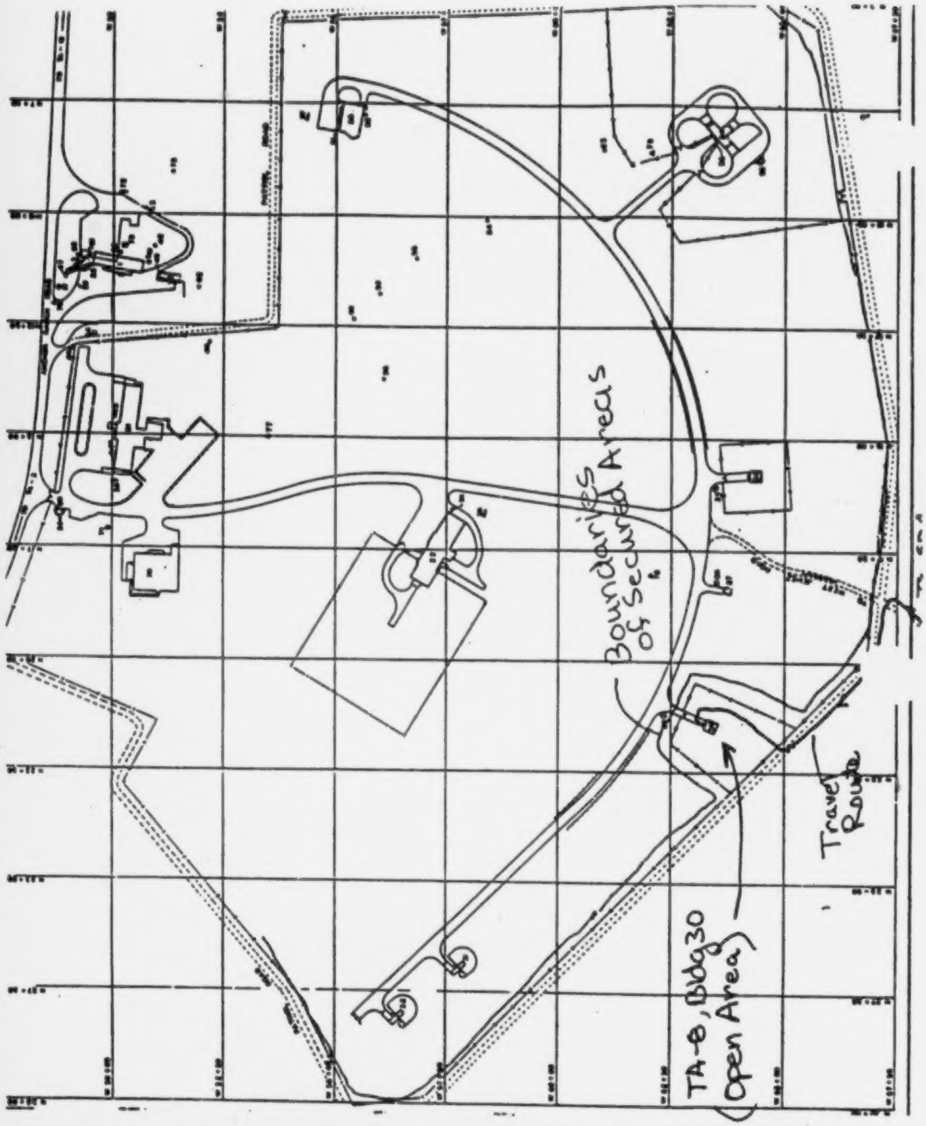
8. All personnel will be alerted that a foreign visitor will be in the area.

9. Principal LANL personnel who will have contact with and escort the visitor on Laboratory property:
   Alan L. Graham, WX-4, 5-0827
   Rodney S. Thurston, WX-4, 7-7378

10. Any changes to this security plan will be submitted to the Personnel Security Section, Group OS-12, for review and approval at least 10 days before the date of the proposed visit.

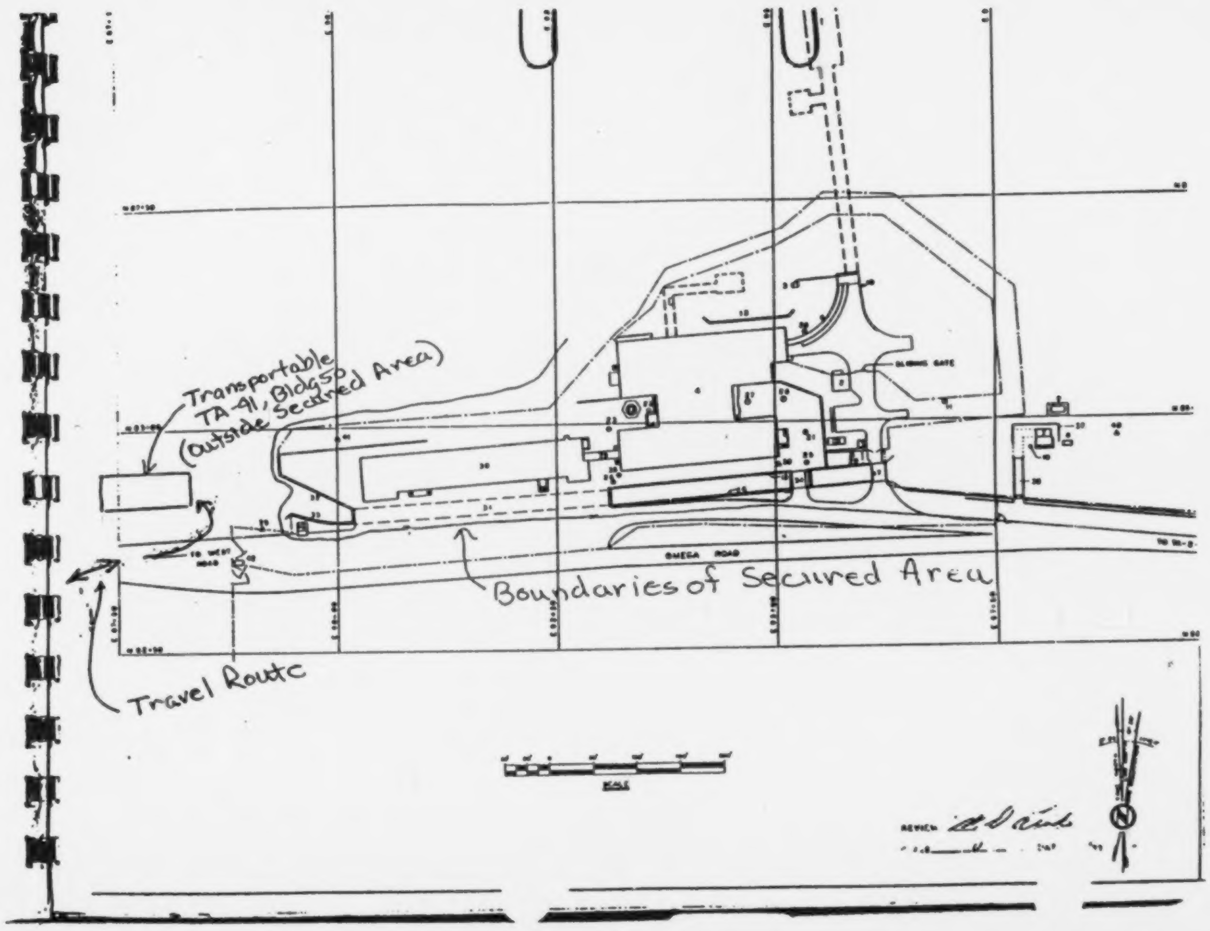
John D. Allen, Group Leader WX-4

ALG/bln


Boundaries of Secured Areas
TA-8, Bldg 30 (Open Area)
Travel Route

Ref. 7.30.

Ref. 7.31.


Transportable
TA-41, Bldg 50
(outside Secured Area)
Boundaries of Secured Area
Travel Route
OMEGA ROAD
TO WEST ROAD
SLIDING GATE
SCALE
REVIEW

Ref. 8.1.

```
  ·5o4A                        LOS ALAMOS NATIONAL LABORATORY AFFILIATE INFORMATION SYSTEM              10/07/88
                                                 ACCOUNTING PAYMENT DETAIL
Status: A                                        09/01/88 Thru 09/30/89                  Daily-Fee  :  184.00
Name: GANANI EHUD                                   Agr-No: COL3233                      Tot-Fee-Days:

Cost   Prog   Exp  Sch    Begin    End     Check    Check     Gross     - Payment Type -   Withholding   Net         Fee
Code   Code   Cd   Nbr    Period   Period  Date     Number    Amount    Split Retro Credit   Amount     Amount       Days

 9604  968R   22   135    090188   092388  092688   202342    2208.00                                  2208.00     12.00
                                                              ----------                   ---------  ----------  -------
                                                    Totals    2208.00                                  2208.00     12.00




                                                  Enter (N)New Selection or (E)Exit:
* Input Required
```

Ref. 8.2.

```
F37-0-560A LOS ALAMOS NATIONAL LABORATORY AFFILIATE INFORMATION SYSTEM  09/23/88
                 Retrieve General Information             UPDATED 09/23/88

Agreement Number: COL3233  Agree-Status: A  Name: GANANI EHUD
Suppl No:      Suppl Date: 10/16/87   Citizenship: ISRAEL

EMPLOYER:  RAFAEL                            Dept: PROPULSION UNIT/P.O.BOX 2250
Street: .                                      City     : HAIFA
State : IS                   Zip: 31202        Ctry-Cd : 04  Phone: (706)259-

Type of Employer     : FOREIGN LABORATORY     Major Field  : FLUID DYNAMICS-CHEM
Sponsoring Org       : WX-4                   LANL Assgnmts:
Former LANL Employee: NO                      Annual Salary:
Former DOE  Employee: NO
VISA HELD INFO: Type: J1     Expiration Date: 10/14/88  Badge Catgory:
CLEARANCE INFORMATION: Type:          Req Date:         Approval Date: 06/10/74
ALIEN INFORMATION:      Appr:         Req Date:         Approval Date:

Init-Beg-Agr-Date: 09/01/88   Initial Max-Days: 130.00   Init-Daily-Fee:  184.00
Cur-Beg-Agr-Date : 09/01/88  Cur-End-Agr-Date: 09/30/88 Cur-Daily-Fee :  184.00
C  -Fytd-Compens :                                      Cur-Fytd-Days :
I     ion-Days   :                                      Fee Status    : F
                 Enter <N>New selection or <E>Exit:
```

AFFILIATE WORKSHEET

Ref. 8.3.

NAME Ganoni, El. J

TRIP NO. 294092 T9T45

CITY LAM

? 46

GROUP CODE 9604

PROC NO. ~~X846~~ R69R

AUTH. SIGNATURE GG Hill.

FL. . SCREEN:

Start	9-7	8A	1	D		
			30	R32		
End	10-8	4P	1	D		
Start						
End						

IRFARE (A) ____ SAF

ENDOR - DATE CITY TO CITY CLASS TOTAL

HP 9.7 NYC NYC SQ 199.06

TOTAL AIRFARE $ 199.06

ENTAL CAR (C) yes.

NDOR DATE

? 9/07 21 days @ 30.00

__ __ __ days @ ____

__ __ __ days @ ____

TOTAL R. C. $ 810.00

IVATE VEHICLE TOTAL AUTO $ ____

________ miles @ $.205 (in system)

GING (H) (COMMERCIAL)

OOR DATE

— ____ __ days @ ____

— ____ __ days @ ____

— ____ __ days @ ____

TOTAL LODGING $ ____

NT ____ (ACTUAL COST) $ ____

IEM EFFECTIVE 12/24/87

1 @ $25day 25.00

1 **@ $69/day 2139.00

____ @ ____ ____
Other

owance includes Commercial Lodging.
use submit receipts.

LAST SCREEN:

TELEPHONE $ ____

GASOLINE 94.40

Official mi. ÷ total mi. = %
Gas × % = amt. to be allowed

LOCAL TRANSPORT ____

PARKING ____

REGISTRATION FEE ____

B _ L _ D _
MEALS ____

OTHER (RC tax, etc.) 42.53

SPLIT COSTS

GROUP ____

GROUP ____

GROUP ____

Pending actual Receipt ON R.C.

Affiliate Signature ____

TOTAL TRAVEL EXPENSE $ 3309.93

Advances/Refunds: DATE AMOUNT

Ticket(s)		
Cash	9-8	800.00
Check No.		1800.00
		709.93
TOTAL ADVANCES/REFUNDS		3,309.93
DUE LANL NOTICE DATE		
DUE TRAVELER CK NO. ____ DATE ____		— 0 —
OTHER		

MAIL TO:

__ Address on Invitation Request

__ Mail Stop ____

__ Other -

```
/07A              LOS ALAMOS NATIONAL LABORATORY              09/26
                       PETTY CASH JOURNAL             Ref. 8.4.

 ame:           GANANI,E

 BSA:           1122

 Cost Center:   9604

 Program Code:  X840

 Expense Code:  28

 Description:   TO REVERSE ENTRY#79745

 Payment Amount:  -800.00

 Type Payment:  CA

 Trip Number:    79745

 Enter one of the following codes:
   <P>Process, <R>Revise, <D>Disregard
```

P

LOS ALAMOS NATIONAL LABORATORY TRAVEL SYSTEM
TRAVEL EXPENSE WORKSHEET

TRAVEL GROUP, FIN-8
MAIL STOP P234

Z number	CC	PRGM	TRIP #

ITINERARY				
SCHEDULED			ACTUAL	
CITY	DATE	TIME	DATE	TIME

ADVANCES

SIGNATURE DATE

OFFICIAL BUSINESS *(Exclude travel time en route)*

Beg. date ______ Time ______
End date ______ Time ______
Beg. date ______ Time ______
End date ______ Time ______

PENSES

Tr ation fares		______	1
Per diem	______ days @ $	______	
	______ days @ $	______	
	______ days @ $	______	
	______ days @ $	______	
	______ days @ $	______	
Lodging	______ @ $	______	
	______ @ $	______	
	______ @ $	______	
	______ @ $	______	
	______ @ $	______	
Telephone		______	2
Rental car		______	1
Rental car gasoline		______	1
Private vehicle	______ mi. @	______	2
ocal transportation		______	2
arking		______	2
egistration fee		______	1
ther			
______		______	2
______		______	2
______		______	2
______		______	2
______		______	2

s included in lodging or in registration fees.
ber of meals furnished
B ______ L ______ D ______ (______)

tal expenses ______

n Number 1127 (3/88)

SPLIT CODING INFORMATION *(If Appropriate)*

Cost center	______	______	______	______
Program code	______	______	______	______
Amount or	______	______	______	______
Percent	______	______	______	______

DETAILS:

Remuneration received $ ______

1. Staple receipts to this form.
2. Details required.

I hereby certify that, except as otherwise noted, the information submitted in this expense worksheet reflects only expenses incurred by me for official business of the Los Alamos National Laboratory during the dates shown. The worksheet reflects all discounts, reductions, tradeins or offsets whatsoever, which reduced the expenses actually incurred.

SIGNATURE DATE

Telephone Number Mail Stop

Ref. 8.5.

R36-1-321A

LOS ALAMOS NATIONAL LABORATORY TRAVEL SYSTEM
TRAVEL EXPENSE WORKSHEET

TRAVEL GROUP, FIN-8
MAIL STOP P234

	Z number	CC	PRGM	TRIP #
NANI EHUD	490864651	9604	XB4G	294092 LOS ALAMOS NEW 09/26/8

ITINERARY

SCHEDULED			ACTUAL	
CITY	DATE	TIME	DATE	TIME

ADVANCES

Previous Cash Advance	800.00
Cash Advance	1800.00
Total Advances	2600.00

Alan Graham 7/26/88
SIGNATURE DATE

OFFICIAL BUSINESS *(Exclude travel time en route)*

Beg. date ________ Time ________
End date ________ Time ________
Beg. date ________ Time ________
E date ________ Time ________

ENSES

Tr ation fares			________	1
Per diem	LOS ALAMOS	____ days @ $	25.00 ________	
		____ days @ $	________	
		____ days @ $	________	
		____ days @ $	________	
		____ days @ $	________	
Lodging	LOS ALAMOS	____ @ $	44.00 ________	
		____ @ $	________	
		____ @ $	________	
		____ @ $	________	
		____ @ $	________	
Telephone			________	2
Rental car			________	1
Rental car gasoline			________	1
Private vehicle		____ mi. @ .205	________	2
Local transportation			________	2
Parking			________	2
Registration fee			________	1
Other.				
________			________	2
________			________	2
________			________	2
________			________	2
________			________	2

included in lodging or in registration fees.
ber of meals furnished.
B ____ L ____ D ____ (________)

otal expenses ________

n Number 1127 (3/88)

SPLIT CODING INFORMATION *(If Appropriate)*

Cost center	____	____	____	____
Program code	____	____	____	____
Amount or	____	____	____	____
Percent	____	____	____	____

DETAILS:

Remuneration received $ ________

1. Staple receipts to this form.
2. Details required.

I hereby certify that, except as otherwise noted, the information submitted in this expense worksheet reflects only expenses incurred by me for official business of the Los Alamos National Laboratory during the dates shown. The worksheet reflects all discounts, reductions, tradeins or offsets whatsoever, which reduced the expenses actually incurred.

SIGNATURE DATE

Telephone Number

R36-1-321A

Ref. 8.6.

LOS ALAMOS NATIONAL LABORATORY TRAVEL SYSTEM
TRAVEL EXPENSE WORKSHEET

TRAVEL GROUP, FIN-8
MAIL STOP P234

	Z number	CC	PRGM	TRIP #
NANI EHUD	490864651	9604	X840	294092 LOS ALAMOS NEW 09/26/8:

ITINERARY				
SCHEDULED			ACTUAL	
CITY /	DATE /	TIME	DATE /	TIME

ADVANCES	
Cash Advance	800.00
Total Advances	800.00

14.4[illegible]

SIGNATURE ____ 4[illegible] DATE

OFFICIAL BUSINESS *(Exclude travel time en route)*

Beg date ______ Time ______
End date ______ Time ______
Beg date ______ Time ______
End date ______ Time ______

PENSES [illegible]

ation fares				1
Per LOS ALAMOS	days @ $	25.00		
	days @ $			
	days @ $			
	days @ $	10.		
	days @ $			
Lodging LOS ALAMOS	@ $	44.00		
	@ $			
	@ $			
	@ $			
	@ $			
Telephone				2
Rental car				1
Rental car gasoline				1
Private vehicle	mi @	.205		2
Local transportation				2
Parking				2
Registration fee				1
Other.				
				2
				2
				2
				2
				2

included in lodging or in registration fees.
er of meals furnished
B ____ L ____ D ____ (____)

al expenses ______

Number 1127 (3/88)

SPLIT CODING INFORMATION *(If Appropriate)*

Cost center ____ ____ ____ ____
Program code ____ ____ ____ ____
Amount or ____ ____ ____ ____
Percent ____ ____ ____ ____

DETAILS:

3,227.78

3,391.1[illegible]

109.13

Remunerztion received $ ______

1. Staple receipts to this form.
2. Details required.

3,501.13

I hereby certify that, except as otherwise noted, the information submitted in this expense worksheet reflects only expenses incurred by me for official business of the Los Alamos National Laboratory during the dates shown. The worksheet reflects all discounts, reductions, tradeins or offsets whatsoever, which reduced the expenses actually incurred.

SIGNATURE ______ DATE ______

Telephone Number

CONSULTANT/VSM TRAVEL ADVANCE

Ref. 8.7.

CLAIM 79745 ... 79725

Ganani, Ehud

COST CODE: 9604

PROG. CODE: X84G

GROUP: WX-4

28/40

CASH OR TICKET RECEIVED	SIGNATURE	DATE
800.00	R Ganani	9/8/88

CLAIM #

Ref. 8.8.

Los Alamos
ne Alamos National Laboratory
Alamos, New Mexico 87545

AFFILIATE ATTENDANCE REPORT AND CERTIFICATION

*Indicate work performed at home base with a single asterisk; **work performed on Official Laboratory Travel Status with two asterisks.

Name	Group	Cost Center	Program Code
EHUD GANANI	WX-4	9604	R68R

ENTER HOURS WORKED PER DAY

Week Beginning	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9/4/88					8	8	
9/11/88		8	8	8	8	8	
9/18/88		8	8	8	8	8	
		attend. courses from [illegible] 10/1/88					

ATTENDANCE APPROVALS

Signature (Group Leader or Division Leader)	Signature (Affiliate) R. Ganani

SPONSORING ORGANIZATION USE ONLY

Is Affiliate's daily fee to be paid for the above time reported?
☐ Yes ☐ No

Was any of this time worked enroute to/from duty station? *(If so, specify hours and dates.)*
☐ Yes ☐ No

** Is Affiliate's daily fee to be paid while on Official Laboratory Travel Status?
☐ Yes ☐ No

AXIMUM dollar amount or MAXIMUM days/hours to be paid on this attendance? *(If so, specify.)*
☐ Yes ☐ No

Is daily fee to be split? *(If so, please indicate below.)*
☐ Yes ☐ No

Dollar amount, percentage or hours	Cost Center	Program Code

MAILING INSTRUCTIONS FOR AFFILIATE'S CHECK

☐ Mail to Affiliate's preferred address
☐ Mail to the following address:

☐ HOLD check; will be picked up
☐ Send to Mail Stop
☒ Notify (Telephone No.) 662-3451

Needed ASAP. Thanks.

Form 1009 (9/85)

ST-2687

Mail To:
ACT-8
Mail Stop P234

Ref. 8.9.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

AFFILIATE INVITATION REQUEST

PLEASE SEND ALL COPIES TO HRD-2, MS P237 FOR DISTRIBUTION

Date: 6-28-88
Cost Code: 9604
Program Code: 86XE ALS
Social Security Number: 490-86-4651

Affiliate's Name (Last, First, Middle): Gamani, Ehud
Title/Organizational Unit: Section Head, Propulsion Unit
Preferred Address (Official Visitors Only): ___ Business ___ Home
Employer (Complete Name): RAFAEL
Business Address (Street, City, State, ZIP): P. O. Box 2250, HAIFA 31202, ISRAEL
Telephone Number (Include Area Code): 04-706259
Home Mailing Address (Street, City, State, ZIP): 49 Einstein St., Haifa, Israel 34602
Telephone Number (Include Area Code): 972-42 52008
Dates of Service: 9/5/88 to 10/6/88
Services are to be rendered at: _x_ Los Alamos ___ Home Base ___ Other (Specify) ___
Category (Check One): ___ Official Visitor ___ Consultant _x_ Collaborator ___ SARA ___ Other (Specify) ___
Citizenship: ISRAEL
Foreign Nationals Only: DOE Approval (Form IA-473 or 982) has been: _x_ Requested (Date) 4/27/88 ___ Granted (Date) ___
Visa type required (For J-1, submit Form 1068): J-1
Visa type held:
Name of Contact(s): Alan L. Graham
Sponsoring Organization: WX-4
Telephone Number and Mail Stop: 7-7378, MS 6787
Specific services to be rendered: Will review add participate in ongoing transport phenomena research.

AUTHORIZED PAYMENTS AND REIMBURSEMENTS

Travel reimbursement authorized: _x_ Yes ___ No
Travel reimbursement authorized From P.O.E. to Los Alamos to P.O.E.
Travel reimbursements authorized away from Los Alamos: ___ To ___ To ___
Subsistence: _X_ Yes ___ No
Rental Car (Local Transportation): _X_ Yes ___ No
Maximum travel, subsistence, rental car not to exceed $___
Official Visitor Category Only
Honorarium: ___ Yes ___ No $___
Stipend (in lieu of transportation, subsistence, etc.): ___ Yes ___ No $___
AUTHORIZED SIGNATURE (Division, AD, DD, DIR):
Typed Name/Title: G. G. Hill, WX Division Leader
Date: 7/1/88
Comments:

FOR TRAVEL USE ONLY
Claim Number ___

Received	Signature	Date

Form Number 910 (10/86)
ACT - 8, VISITOR PAYMENT SECTION
ST-2624

Ref. 8.10.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: K. J. Holliway, HRD-2, MS P237
DATE: September 20, 1988
THRU: G. G. Hill, WX-DO, MS P945
MAIL STOP/TELEPHONE: G787/7-7378
FROM: J. D. Allen
SYMBOL: WX-4
SUBJECT: EHUD GANANI - FOREIGN NATIONAL

Dr. Ehud Ganani, an Israeli Foreign National, has arrived in Los Alamos and has begun to render services for Alan Graham on the Macrostatistical Hydrodynamics project. He does not have DOE approval, but he does have a valid J-1 visa and a collaborator's agreement with the Laboratory. Dr. Ganani's contribution to the success of this project is already and will continue to be of such value that we intend to allow him to work off site and we intend to compensate him for his time and effort. We understand that Dr. Ganani is not allowed to enter Laboratory facilities or trespass on Laboratory property. We also understand that DOE approval is not required for him to work off site.

bln

Cy: G. G. Hill, WX-DO, MS P945
D. C. Nelson, WX-4, MS G787
R. S. Thurston, WX-4, MS G787
A. L. Graham, WX-4, MS G787

Ref. 9.1.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: A. J. Tiedman, ADS, MS A120
DATE: September 15, 1988
THRU: C. Robertson
MAIL STOP/TELEPHONE: B236/7-5897
FROM: L. Salazar
SYMBOL: OS-12-88/275
SUBJECT: ISRAELI ASSIGNEES: GANANI, PARTOM, AND SACK — HEADS UP

WHAT: Possible problem with three Israeli assignee requests that are pending approval by DOE/HQ. (See Att. 1 for copies of requests.)

DISCUSSION: Two of the three Israelis are in Los Alamos. We have reminded the hosts that they should not have foreign nationals make final arrangments to come here until approval is received and that they are not to be permitted to start work even though they are already here. A final decision is not expected until the week of 9/19/88.

According to current information from HQ, there is a strong case for denial, or if approved, there may be limitations such as that they be under constant escort while here. (See Att. 2 for follow-up details.)

RECOMMENDATION: None at this time. We just thought you should be aware of this in case you get calls from your fellow ADs on this. We are doing everything we can to get a final decision as soon as possible.

Att: 1. Requests (3) (Ganani, Partom, Sack)
2. Follow-up information

Cys: File 11.2
CRM-4 (2), MS A150

Ref. 9.2.

FOLLOW-UP: GANANI, Ehud
PARTOM, Yehuda
SACK, Noam

9/6/88: Bill Sprouse called T. K. Lau at IA/HQ to check on status of subject assignees and was advised that a decision had not yet been made.

9/8/88: Bill advised by C. Curtis, OSS, of a possible problem on these assignees — but still no decision; they hoped to have one by 9/12/88.

9/13/88: Bill was advised by C. Curtis, OSS, that there was definitely some concerns and OSS was non concurring unless special provisions were taken. However, a meeting was to be held on September 14 to discuss the three requests.

9/15/88: Bill was notified by T. K. Lau, IA, that there was a pretty strong case (3 pages) for denial and an approval didn't look good. However, the Director/IA was out until September 16 and they are holding for his return to make the final decision.

Ref. 10.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

MEMO FOR THE RECORD September 28, 1988

Last week approximately September 21, 1988, DOE/AL, Tom Thomas called to advise he suspected that three (3) Israeli's were here on Laboratory property without DOE approval. I investigated the matter and discussed it with each host. Here are the results:

SACK, NOAM — not here and not expected to come for several months.

GANANI, EHUD — he is here, however, he is working out of his host's garage using no DOE equipment.

PARTOM, YEHUDA — he is here also but he is working out of an office in Los Alamos. The office belongs to a company called JOMAR, the owner is a friend of the host and loaned it to him. Partom is not using any DOE equipment.

Bill Sprouse

Bill Sprouse

UNCLASSIFIED

Ref. 11.1.

DOE F 1325.7

Exception to SF 14, Approved by NARS, June 1979

1\. INSERT ABOVE CLASSIFICATION LEVEL, UNCLASSIFIED, OR OFFICIAL USE ONLY

1

2\. MESSAGE CONTAINS WEAPON DATA? ("X" appropriate box. Message Center will not transmit message unless one box is marked.)

☐ YES ☑ NO

U.S. DEPARTMENT OF ENERGY

TELECOMMUNICATION MESSAGE

(See reverse side for instructions)

1899

3\. USE WHEN REQUIRED

THIS DOCUMENT CONSISTS OF 8 PAGES

NO. 1 OF 2 COPIES, SERIES ____

4\. PRECEDENCE DESIGNATION ("X" appropriate box)

	FOR NORMAL USE		EMERGENCY USE ONLY	
ACTION:	☑ Routine	☐ Priority	☐ Immediate	☐ FLASH
INFO:	☐ (8 Hrs.)	☐ (3 Hrs.)	☐ (30 Mins.)	☐ (ASAP)

5\. TYPE OF MESSAGE ("X" appropriate box)

☑ Single Address
☐ Multiple Address
☐ Title Address
☐ Book Message

FOR COMMUNICATIONS CENTER USE

MESSAGE IDENTIFICATION

NR: DTG: Z

6\. FROM

T. K. LAU
US Department of Energy
Washington DC 20585

7\. OFFICIAL BUSINESS (Signature of authorizing official) (TIME) A.M. [✓ P.M.]

8\. DATE 9/21/88

9\. TO

Los Alamos National Laboratory
P. O. Box 1663-Group, OS-12
MS B-236
Los Alamos, NM 87545

Attn: Mary Martaret Trujillo
FTS: 843-1368

BE BRIEF - ELIMINATE UNNECESSARY WORDS

10\. ORIGINATOR (On separate lines, enter Name, Routing Symbol, & Tel. No.)

T. K. Lau
IE-12
896-1180

11\. DERIVATIVELY CLASSIFIED NSI

NATIONAL SECURITY INFORMATION
Unauthorized Disclosure subject to Administrative and Criminal Sanctions.

Derivative Classifier: (Name) ____
(Title) ____
Declassify on: (Date or Event/OADR) ____
Derivatively Classified by: ____ (Guide or Source Document)

12\. ORIGINALLY CLASSIFIED NSI

NATIONAL SECURITY INFORMATION
Unauthorized Disclosure subject to Administrative and Criminal Sanctions.

Originally Classified by: (Name) ____
(Title) ____
Declassify on: ____ (Date or Event/OADR)

13\. ☐ RESTRICTED DATA

This document contains Restricted Data as defined in the Atomic Energy Act of 1954. Unauthorized Disclosure subject to Administrative and Criminal Sanctions.

ATIVE
SIFIER ____
(Name and Title)

14\. ☐ FORMERLY RESTRICTED DATA

Unauthorized disclosure subject to Administrative and Criminal Sanctions. Handle as Restricted Data in Foreign Dissemination Section 144.b Atomic Energy Act, 1954

DERIVATIVE CLASSIFIER ____
(Name and Title)

15\. INSERT BELOW CLASSIFICATION LEVEL, UNCLASSIFIED, OR OFFICIAL USE ONLY

UNCLASSIFIED

United States Government 2 1899 Department of Energy

memorandum

Ref. 11.2.

DATE: September 20, 1988

REPLY TO ATTN OF: IE-12

SUBJECT: Proposed Denial of Visit or Assignments
Reference: Memorandum from DP-343.4 Recommendation of Denial of Visits to LANL

TO: Acting Deputy Assistant Secretary for Security Affairs, DP-30

I have reviewed the proposed V&A denial of three Israeli Scientists, Yehuda Partom, Noam Sack and Ehud Ganani, to LANL. This action highlights what I consider to be a serious problem with our approval process; we are prepared to reject three visiting scientists although neither the current order nor the proposed new one requires prior headquarters review, and the subject matter is not directly covered by the "Sensitive Subject" listing. If there is really a basis for concern on such visits, and there may be, we have to do a better job of developing approval/rejection criteria. For example, our Sensitive Subjects might include any unclassified work that has a direct relationship to weapon systems (propulsion or explosives). We might likewise delete such items as fuel fabrication (unless for production or propulsion reactors) and possibly some of the other items. In other words, our Sensitive Subject lists needs review.

I think the visiting scientist's employer should also be factor in the criteria. In the subject case I am less troubled by the rejection of Partom and Ganani on the rationale you provided because both are directly employed by their country's defense establishment. On the other hand, to elevate cosmology to the Sensitive Subject list and to reject a University professor recognized in this field sets a policy and precedent which I must question. I recommend you reconsider that action, and will hold up action on the Sack application pending your response.

Regardless of the outcome on these individuals, it is clear that more detailed and definitive guidance on visits and assignments of scientists from Sensitive Countries needs to be developed for the revised DOE Order 1240.2 (or its first updating).

Harold Jaffe, Director
Office of International Research
and Development Policy

Attachment

cc: R. Williamson

3 1699

Ref. 11.3.
004016 2

United States Government Department of Energy

memorandum

DATE:

REPLY TO ATTN OF: DP-343.4

SUBJECT: RECOMMENDATION ON VISIT OR ASSIGNMENTS

TO: Acting Deputy Assistant Secretary for Security Affairs, DP-30

Following describes a requested Visit or Assignment to a DOE facility(s) and a recommendation for DP-30 consideration

NAME(S):	CITIZENSHIP:
Partom, Yehuda	Israel
Sack, Noam	Israel
Ganani, Ehud	Israel

FACILITY: LANL
o Sack and Ganani will be assigned for one year 9/88 - 9/89.
o Partom will be assigned for three weeks during the period 9/12/88 - 10/7/88.

DESCRIPTION OF V/A: Partom - Collaboration in fundamental research on the shock-induced decomposition initiation and detonation of heterogeneous explosives. Sack - Cooperative research in stellar collapse. Ganani - Transport phenomena in multiphase systems.

TECHNOLOGY TRANSFER:

Concerns: YES x NO__

SECURITY:

Indices Check Complete YES__ [✓ NO x] OTHER__

Security plan in effect YES x NO__ OTHER__

Visitor/assignee will require access to secure area YES__ NO x

OCTP REMARKS: All three of these Israelis are involved in work closely tied to understanding weapons systems phenomenology. Dr. Ganani works on rocket propulsion systems at Rafael. Dr. Partom is a leading Israeli researcher on modeling of explosive initiation and detonation, has previously visited LANL and developed a new detonation code which is currently being used by LANL. Dr. Sack is well schooled in astrophysics and has visited LANL numerous times.

4 1899 Ref. 11.4.

ELECOPIER 495 ;12- 9-88; 2:48PM ; 004014 3

p 13,88 13:45 P.03

o OCTP has major concerns about these requests. Israel has not signed the Non-Proliferation Treaty, its nuclear facilities are not safeguarded under IAEA and it is US law in part based on the treaty, AEA and NNPA not to cooperate with Israel or any other non NPT signator in any nuclear weapons activities. Also, there is no agreement for cooperation permitting such an exchange. The net result of these assignments is that an Israeli "weapons team" has access to one of our most sensitive weapons laboratories. These assignments to a DOE weapons laboratory, let alone to work in weapons related areas, pose significant technical and political risks. We recognize two of the Israeli's have visited LANL previously and contributed to the DP mission. However, the risk of these collaborative activities outweighs the benefits and OCTP recommends that DP-30 non-concur. If we wink at these assignments and let them pass, we undermine the effectiveness of a visits and assignments policy that is already quite shaky. We also weaken our position when we show our concerns about other super power nuclear collaboration we would not like to see happen such as the USSR's collaboration with India on nuclear submarines.

OSS Remarks: ✓
o OSS supports the OCTP nonconcurrence.

o LANL ISEC recommends approval, and the Director, LANL, indicates the required security controls will be in effect during the assignment. The Albuquerque Operations Office initially reviewed the security plans and indicated they were sufficient to provide adequate protection. However, on futher review, ALO Security and OSS believe the following modification to the security plans are necessary if the assignments are approved.

o All three Israelis must be escorted at all times while at LANL.

o Controls must ensure minimum interaction with cleared personnel who have nuclear weapons related information.

o Personnel with whom the Israelis associate are to be briefed on the Israelis background work, relationships to the weapons program and other sensitive technologies, and related classification, export control and Non-Proliferation Treaty (10CFR810) regulations.

DP-34/DP-32 Recommendation:

Concur___ Nonconcur x*
* In the event DP should concur with this assignment, or for some other reason the assignments are approved, the security plans should be modified as discussed in the Remarks section.

5 1599 Ref. 11.5.

DP-40 Recommendation:

Concur__ Nonconcur BADB Date 9/14/88

DP-30 Decision:

Concur__ Nonconcur J Date 9-13-88

A. Bryan Siebert, Jr.
Acting Director
Office of Classification
and Technology Policy
Defense Program

Elizabeth Q. Ten Eyck

Elizabeth Q. Ten Eyck
Director
Office of Safeguards and Security
Defense Programs

FOREIGN VISITS AND ASSIGNMENTS ROUTING MEMO 6 1899 Ref. 11.6.

Name of Visitor: PARTON, YEHUDA
ntry of Citizenship: IS

Date Entered: 06/20/88
Visit Number: 302

Facility: LANL
Program Office: DP
Dates: 09/12/88 to 10/07/88
Subject: WILL CONTINUE COLLABORATION IN FUNDAMENTAL RESEARCH ON THE SHOCK-INDUCED DECOMPOSITION OF EXPLOSIVES
Remarks: EXTENSION - REFER VISITOR'S #173

Facility:
Program Office:
Dates:
Subject:
Remarks:

DP's memo (Siebert to Gilbert) for non Concurrence and IE's memo (Jaffe to Gilbert) are attached.
SACK's visit is pending, TK Lam 9/27/88

Facility:
Program Office:
Dates:
Subject:
Remarks:

*** FOLLOWING LINES RESERVED FOR USE BY OCTP/DP ***

Concurred (Y/N): N
Date: 9/13/88
Signed: EGilbert pp
Comments: ________

*** FOLLOWING LINES RESERVED FOR USE BY IE ***

Approved (Y/N): __
Date: ______
Program Officer: ________
Approved (Y/N): N
Date: 9/27/88
ffice Director: Jaffe
ts: Denied based upon DP denial

Rev 5/88

FOREIGN VISITS AND ASSIGNMENTS ROUTING 7 MEMO 1899 Ref. 11.7.

Name of Visitor: GANANI, EHUD
untry of Citizenship: IS

Date Entered: 05/26/88
Visit Number: 284

Facility: LANL
Dates: 09/01/88 to 08/31/89
Subject: TRANSPORT PHENOMENA IN MULTIPHASE SYSTEMS.

Program Office: ER

Remarks: DP memo (Sizbert to Gilbert) of Nonconcurrence attached to field
IE memo (Jaffe to Gilbert) requesting reconsideration of SAK is also attached

Facility:
Dates:
Subject:

Program Office: 9/27/88

Remarks:

Facility:
Dates:
Subject:

Program Office:

Remarks:

*** FOLLOWING LINES RESERVED FOR USE BY OCTP/DP ***

Concurred (Y/N): N

Date: 9/13/88

Signed: C Gilbert

Comments:

*** FOLLOWING LINES RESERVED FOR USE BY IE ***

Approved (Y/N): _

Date: ______

Program Officer:

Approved (Y/N): N

Date: 9/27/88

Office Director: Jaffe

nts: Denied based upon DP denial

Rev 5/88

FOREIGN VISITS AND ASSIGNMENTS ROUTING MEMO 8 1899

Ref. 11.8.

Name of Visitor: PARTOM, ILYA S
Country of Citizenship: IS

Date Entered: 07/29/88
Visit Number: 318

Facility: LANL
Program Office:
Dates: 09/19/88 to 10/07/88
Subject: RESEARCH: UNSATURATED FLOW AND MASS TRANSPORT IN THE SUBSURFACE ENVIRONMENT.
Remarks:

Facility:
Program Office:
Dates:
Subject:

Remarks:

Facility:
Program Office:
Dates:
Subject:

Remarks:

*** FOLLOWING LINES RESERVED FOR USE BY OCTP/DP ***

Concurred (Y/N): Y
Date: 9/16/88
Signed: E. Ten Eyck
Comments:

*** FOLLOWING LINES RESERVED FOR USE BY IE ***

Approved (Y/N): __
Date: ______
Program Officer:
Approved (Y/N): √
Date: 9/27/88
Office Director:
Comments:

Rev 5/88

Ref. 12.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO George G. Hill, WX-DO, MS P945

DATE October 3, 1988

FROM Allen J. Tiedman

MAIL STOP/TELEPHONE A120/7-9390

SYMBOL ADS-88-684A

SUBJECT DISAPPROVED ALIEN ASSIGNMENT

The Department of Energy has disapproved our assignment request for Ehud Ganani, Israeli, Collaborator, for intermittent visits from September 1, 1988 through August 31, 1989.

AJT/BS:mmt

Attachments:
1. Memo, Harold Jaffe, Director, IE-12, to Acting Deputy Assistant Secretary for Security Affairs, DP-30, dtd September 20, 1988
2. Memo, A. B. Siebert, Jr., and E. Q. Ten Eyck, to DP-343.4, dtd September 14, 1988
3. Foreign Visits and Assignments Routing Memo (Ganani, Ehud)

Cy: H. Valencia, LAAO, w/enc., MS A316
J. Allen/A. Graham, WX-4, w/enc., MS G787
R. Vrooman, ISEC, w/enc., MS G729
CAS, w/o enc., MS P237
CRM-4, w/enc., MS A150
OS-12, w/enc., MS B236

Ref. 13.

10/7/88 (8:45) -- Bob Cutter, DP, called to request information on the three Israelis that were disapproved, i.e., Partom, Ganani, and Sack. He requested a statement of activity on each one to include:

- What are they doing - status
- Where are they physically and what are they doing in relation to the work that they requested approval for
- Do they have access to any computers
- At least a paragraph or two on each

He says that Senator Glenn will make it an issue on Tuesday He also requested any comments that GAO made on their report.

He says that he needs to prepare a report by 5:00 p.m his time.

I reported this to Bill Sprouse and Robby.

(9:30) Received call from Bob Cutter, he asked that the information be sent to him in 3 hours. Then he asked for Miskowicz phone number. After Bill talked to him, I transferred his call to DOE/AL.

Ref. 14.1.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

June 14, 1988

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Waller:

Enclosed is completed Form IA-473 requesting approval for the following assignment:

NAME: Partom, Yehuda

COUNTRY OF CITIZENSHIP: Israel

TYPE OF ASSIGNMENT: Consultant (Collaborator in Laboratory terminology) From September 12, 1988 thru October 7, 1988.

REMARKS: This assignment will involve a sensitive country but will not involve a sensitive subject.

The research involved is totally unclassified. Required security controls will be in effect during the assignment. Laboratory personnel are advised of DOE requirements governing visits and assignments by foreign nationals by issuance of copies of DOE orders and directives, as issued. The Office Procedures Manual (Section 3.3) contains instructions to Laboratory personnel on all aspects of visits and assignments by foreign nationals as applicable to the Los Alamos National Laboratory.

This letter and enclosures are forwarded for your information and distribution to other Headquarters offices.

Sincerely,

Siegfried S. Hecker
Director

Enclosure - DOE Form IA-473
Security Plan and Maps
ISEC Letter

Cys: D. D. McIntyre, AL, w/enc., MS A906
H. Valencia, LAAO, w/o enc., MS A316
L. Gritzo, M-DO, w/o enc., MS P915
A. Anderson/J. Wackerle, M-9, w/o enc., MS P952
R. Vrooman, ISEC, w/o enc., MS A122
CAS, w/o enc., MS P237
CRM-4 (2), w/enc., MS A150
OS-12, w/enc., MS B236

An Equal Opportunity Employer/Operated by University of California

Ref. 14.2.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE June 1, 1988
IN REPLY REFER TO ISEC
MAIL STOP G729
TELEPHONE 505/665-2394
FTS: 855-2394

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Waller:

The Reaction Science Group (M-9) of the Dynamic Testing Division (M) is requesting permission for Dr. Yehuda Partom, a leading Israeli researcher on modeling of explosive initiation and detonation, to visit for three weeks. This will be Partom's third visit to Los Alamos National Laboratory. He was a visiting staff member from October 1985 to October 1986, and he made a short visit during the summer of 1987. M-9's collaboration with Partom has been very beneficial for the DOE. Partom developed one of the few new detonation codes during his year-long stay. It is now used by M-9.

Dr. Partom's conduct while at Los Alamos has been professional and proper. There has been nothing to suggest a security problem.

ISEC recommends approval of this request.

Sincerely,

Robert S. Vrooman
ISEC Officer

RSV:jb:dmq

Cy: J. D. Wackerle, M-9, MS P952
OS-12, MS B236
CRM-4 (2), MS A150
ISEC File

Ref. 14.3.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

REQUEST FOR UNCLASSIFIED VISIT OR ASSIGNMENT BY A FOREIGN NATIONA

This form must be completed for every unclassified visit or assignment by a foreign national to the Los Alamos National Laboratory. DOE Forn IA-473 will also be required for (1) all assignments; (2) visits by nationals of sensitive countries; (3) visits involving access to sensitive subject as defined in DOE Order 1240.2; and (4) visits by high-level foreign nationals.

PART I

1. Name (Last, First, Middle) PARTOM, Yehuda	Title (Individual's Position) Deputy Division Ldr.	Dates (in Los Alamos) 9/~~10~~12/88-10/~~9~~7/88

2. Country of Citizenship ISRAEL	Request for ☐ Visit ☒ Assignment	Will access to sensitive subjects (DOE Order 1240.2) be required? ☐ Yes ☒ No

3. Laboratory Contact (Name) Jerry Wackerle	Group and Organization Code M-9	Mail Stop P952	Telephone 7-4477

4. Locations (Tech Areas & Bldgs.) ☒ Nonsecurity ☐ Security (Requires Form 864)

TA-40 (#1) TA-6-61, TA-3 490, 261, 409 1663 207, 43, 216, 218, 215, 32 123

5. If Assignment, check appropriate box ☐ LTVSM ☐ Temp. Employee ☐ Reg. Employee ☐ Student

☐ Alien Guest Scientist ☒ Collaborator ☐ Consultant ☐ Official Visitor ☐ Other

6. Justification (Not required when Form IA-473 is used.)

See form IA-473

7. Payment Required ☒ Yes ☐ No	Cost Code 9109	Program Code CX21

8. Employer's Name Rafael Ballistic Center	Department Division 20

9. Employer's Address (Street, City, State, ZIP, Country)

P. O. Box 2250

Haifa, Israel

APPROVALS

Group and Division Leader signatures below certify that required security controls will be in effect during the visit/assignment. When a security plan is required, the approving officials assure that (1) a prior inspection of the area to be visited will be performed to insure that any item which might disclose classified information has been removed; (2) signs will be posted in the area to be visited cautioning employees that an uncleared visitor is in the area; and (3) escort responsibilities and badging procedures will be reviewed by employees involved in the visit.

Group Leader Ronald L Rabie	Date 5/23/88	Associate Director	Date
Division Leader	Date 5/24/88	Director	Date

PART II - REPORT

Visit

☐ Took Place ☐ Cancelled

Assignment

Action/Effective Date:		Termination/Effective Date:	
☐ Entrance on Duty	☐ Will Not Report	☐ Completed Assignment	☐ Granted Leave of Absence
☐ Change in Status		☐ Acquired US Perm. Res. Status	☐ Other (Specify)

Form #982 (4/88)

Ref. 14.4.

U.S. DEPARTMENT OF ENERGY
Office of International Affairs

OMB Control N
1910-21(

REQUEST FOR FOREIGN NATIONAL UNCLASSIFIED VISIT OR ASSIGNMENT

This form is authorized by the Department of Energy Organization Act (P.L. 95-91) and the Atomic Energy Act of 1954 (P.L. 83-703). The form must be completed for all visits involving sensitive countries, subjects and facilities and for all assignments. The Department of Energy (DOE) does not consider the data to be confidential. If more space is needed for any item, use the remarks/continuation section. PLEASE READ THE INSTRUCTIONS ON THE REVERSE SIDE BEFORE COMPLETING THIS FORM.

PART I: IDENTIFICATION *(To be completed by requester or agent acting on his/her behalf)*

1. Name of Requester *(Last, First, Middle)*: PARTOM, Yehuda

2. Country of Citizenship: ISRAEL

3a. Date of Birth *(Mo, Da, Yr)*: 11/24/34

3b. Place of Birth *(City, State, Country)*: TEL-AVIV, ISRAEL

4. Date of Request *(Mo, Da, Yr)*: 5/12/88

3c. Passport Number: 2744753

3d. Expiration Date *(Mo, Da, Yr)*: 5/8/90

3e. Port of Entry: J.F.K. Airport

5. Knowledge of English *(Check one line for each column)*	Speaking Ability (a)	Comprehension (b)	Reading Ability (c)	Writing Ability (d)
(1) Fluently/Easily	X	X	X	X
(2) Not Fluently/Not Easily				
(3) None				

6a. Name and Address of Current Employer:
State of Israel Ministry of Defence
Armament Development Authority
Rafael Ballistics Center
Box 2250
Haifa, ISRAEL

6b. Name and Address of Place of Work *(if different from 6a)*:

6c. Kind of Business or Organization *(e.g. government, etc.)*: vernment

6d. Division, Department or Subunit You Work In: Division 20

itle, Position or Description of Duties: eputy Division Leader

6f. Field of Research: Shock Waves

6g. Work Telephone and/or Telex No.: 9-011-972-4-305027

7a. Have you been in communication with anyone in DOE or an affiliated organization concerning this visit/assignment?
(1) ☒ Yes . . . *Answer 7b.* (2) ☐ No . . . *Skip to 8*

7b. Name, Address and Telephone, if possible, of Person:
Jerry D. Wackerle, 505-667-4477
Group M-9, Los Alamos National Laborato
Los Alamos, NM 87545

8a. This request is for *(Check appropriate box)* (1) ☐ A Visit (2) ☒ An Assignment

8b. Organization(s) and Location(s) to be visited or assigned:
Los Alamos National Lab
Laboratory
Los Alamos, NM 87545
Assigned to Group M-9
(will work in uncleared area)

8c. Desired date(s) of visit or assignment:
9/12/88
thru
10/7/88

8d. Subjects to be discussed at each location, or Statement of research in which you wish to be assigned:
Will continue collaboration in fundamental research on the shock-induced decomposition initiation and detonation of heterogeneous explosives. Investigations are centered on devising of theoretical models for hotspot behavior, incorporating models into continuum numerical hydrodynamic calculations and testing of models with M-9 experimental data.

9. A brief description of your technical qualifications and experience in relation to your visit/assignment. *(If an assignment, include university/college training with degrees and dates conferred.)*
B. Sc., M. Sc., D. Sc., Technion, Haifa, 1959, 1961, 1967, 1968/9, 1976/7: Research associate, at Brown U. Eng. Dept., Providence, R. I.; 1970-present: Adjunct Prof. Technion, Mech. Eng.; 1961-present: Research Eng. at Rafael;1972- of Explosives Dept; 1984-present Deputy Division Head. Visiting SM at M-9, Oct 85 to Oct 86. Technical experience in: Shock-wave physics, computational physics, impact dynamics, plastodynamics, terminal ballistics; has authored or coauthored 54 journal papers in these field

10. Your visit/assignment will be on whose behalf?
(1) ☐ Educational Institution (2) ☐ Industry (3) ☐ Scientific or technical organization (4) ☐ Yourself
(5) ☒ Government (6) ☐ Other - Specify

Ref. 14.5.

SECURITY PLAN FOR ASSIGNMENT OF YEHUDA PARTOM

Los Alamos National Laboratory Group M-9 proposes to continue to retain Yehuda Partom, an Israeli National, as a Laboratory Affiliate, and to have him on assignment at Los Alamos during the period September 12 through October 7, 1988. His principal host will be Jerry Wackerle, Group M-9, Mail Stop P952, telephone (505)667-4477.

Our security Group OS-12 will issue Partom a red, picture, identification badge on his first day of work, and he will be required to wear it visibly (above the waist) while working on Laboratory property. This badge does not admit Partom to any security areas, but will provide admission to the Wellness Center and after-hours use of the Technical Library. Partom will relinquish the badge as part of his termination processing.

We expect Partom mostly to work normal hours for the 20 working days between September 12 and October 7. Evening work and some trading of weekend days for weekdays may occur. He will be located at TA-6, Building 61, Room 110. This is a small prefabricated building with a conference room, kitchen, comfort facilities, and six offices. It is located in a special uncleared area adjacent to the M-Division security area, and about two miles west of the Laboratory Administration Building in TA-3 (Map 1). In addition to the usual telephone, office furniture and supplies, Partom will be provided a computer terminal and a telephone-line connection that will allow him to do computations on the open (unclassified) Cray computers and the Central Computing Facility at TA-3.

Additional Laboratory facilities that Partom will visit will be limited to those required for administrative services, health maintenance, and attending unclassified seminars and talks relevant to his project. These facilities are all in TA-3, South Mesa site, and are indicated in Map 2. They include:

A. Building 490, Reception Center, for badging,

B. Building 261, the Otowi Building, for visits to Personnel Services, Payroll, Travel and the Cafeteria,

C. Building 409, Occupational Medicine, if such services are needed,

D. Building 1663, the Wellness Center, and

E. Building 207, the Technical Library.

Potential locations of meetings and seminars include:

F. Administration Building main auditorium, SM-43, Room 680 when open to public,

G. Study Center, SM-207, Rooms 216 and 218, when operated in unclassified mode,

H. Physics Auditorium, SM-215, Room 182,

I. Center for Materials Science Conference Room, SM-32, Room 134, and

J. T-Division Conference Room, SM-123, Room 121.

Ref. 14.6.

Partom's principal access to his work station and the TA-3 area will be back and forth along West Jemez Road, as indicated on the maps, and the various streets and parking lots serving the locations listed above. Although on Laboratory property, public access is allowed to all of these routes. Partom previously spent a year here and is familiar with all of the cited locations, and will not require escort. He will, of course, be denied access to security areas, and will be instructed to stay away from Laboratory nonsecurity areas that are not listed above and clearly are not open to the public.

Partom's principal contacts will be with members of Group M-9, all available at the mail stop and telephone given for Wackerle at the beginning of this document. Technical discussions may be with Allan Anderson, William Davis, Jerry Dick, Ron Rabie, Charles Forest and Steve Sheffield; Mary Ann Garcia and Marianna Vigil will have frequent contact for time reporting and secretarial services.

Additionally, Partom may have technical discussions with:

Name	Organization	Mail Stop	Phone Extension
James N. Johnson	T-1	B267	7-7580
Pier Tang	X-4	F664	7-3557
Howard Cady	M-1	C920	7-4992
James Travis	M-DO	P915	7-5653

Partom will be given access to only unclassified equipment, computer lines, data and reports. These reports will include the unclassified portions of the M-9 Group quarterly reports; otherwise the written material he will review will generally be open published material or manuscripts in preparation for publication.

Those in principal contact with Partom will be reminded to not discuss classified material with him. This is in effect reminding them of a more general rule, in that Partom will always be in open, unclassified areas, and in such locations we do not discuss classified material with anyone, whether they have a clearance or not.

Ref. 15.1.

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO Ludwig A. Gritzo, M-DO, MS P915

DATE October 3, 1988

FROM Allen J. Tiedman

MAIL STOP/TELEPHONE A120/7-9390

SYMBOL ADS-88-684

SUBJECT DISAPPROVED ALIEN ASSIGNMENT

The Department of Energy has disapproved our assignment request for Yehuda Partom, Israeli, Collaborator, from September 12, 1988 through October 7, 1988.

AJT/BS:mmt

Attachments:

1. Memo, Harold Jaffe, Director, IE-12, to Acting Deputy Assistant Secretary for Security Affairs, DP-30, dtd September 20, 1988
2. Memo, A. B. Siebert, Jr., and E. Q. Ten Eyck, to DP-343.4, dtd September 14, 1988
3. Foreign Visits and Assignments Routing Memo (Partom, Yehuda)

Cy: H. Valencia, LAAO, w/enc., MS A316
A. Anderson/J. Wackerle, M-9, w/enc., MS P952
R. Vrooman, ISEC, w/enc., MS G729
CAS, w/o enc., MS P237
CRM-4, w/enc., MS A150
OS-12, w/enc., MS B236

Ref. 15.2.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO Marti Browne, CAS, MS-P237
DATE September 20, 1988
THRU L. A. Gritzo, M-DO, MS-P915 G 9/20
MAIL STOP/TELEPHONE MS P952, 7-4477

FROM R. L. Rabie
SYMBOL M-9
SUBJECT PAYMENT OF YEHUDA PARTOM'S CONSULTING FEE

* M Division wishes to pay Yehuda Partom [redacted] his fee as stated in our consulting agreement with him for the period 19 September through 7 October if he is able to render services for that time. I have arranged an office for him off of Laboratory property in Los Alamos where he and Jerry Wackerle may continue to work on the project they had planned. This work will lead to a joint paper in the upcoming Detonation Symposium.

It is my wish that we honor the agreement we have with Dr. Partom and that we arrange to pay him for services rendered through 7 October 1988. He will be working for M-9 but will not be working on Laboratory property or using Laboratory materials or facilities.

R. L. Rabie
R. L. Rabie

* 9/21 [redacted] changes per Rabie's instructions

Ref. 15.3.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: Marti Browne, CAS, MS-P237

DATE: September 16, 1988

THRU: L. A. Gritzo, M-DO, MS-P915

MAIL STOP/TELEPHONE: MS P952, 7-4477

FROM: R. L. Rabie

SYMBOL: M-9

SUBJECT: TERMINATION OF A LABORATORY CONSULTANT AGREEMENT

The Department of Energy has denied the proposed visit of Dr. Yehuda Partom for the period 12 September 1988 through 7 October 1988. Unfortunately, this denial was issued near close of business on the 16 of September 1988. Dr. Partom had received a notice of approval, erroneously sent from our Laboratory Consultants and Affiliates Services office, and has been working since 12 September on the project we had set up for him. In addition to his good faith appearance in Los Alamos to render services as a consultant to M-9, he is giving a paper at the American Range Association Meeting being held in Albuquerque the week of 10 October.

With the DOE denial of permission for Dr. Partom's consulting he has the option of returning to Israel and then coming back to Albuquerque in October for the ARA meeting or remaining in the United States for the next three weeks at his own expense and awaiting the meeting. I understand that his intention at present is to remain in Los Alamos and attend the ARA meeting.

Dr. Partom has worked with M-9 for the past two and one-half years. He spent a sabbatical year with us and some time last summer consulting. Our interactions with him have been unusually fruitful. Given the circumstances of our long-term collaboration with Dr. Partom and the very unfortunate present state of affairs as well as our hope for future interactions, it is my belief that full payment of his consulting fees for the period 12 September through 7 October 1988 should be made. In addition, the cost of his rental car for the same period should be reimbursed. It is well to realize that Dr. Partom had no indication from this Laboratory that there was any problem with his proposed visit. In fact, the only documentation he received indicated that his visit was approved.

R L Rabie
R. L. Rabie

L A Gritzo 9/16
L. A. Gritzo

Ref. 15.4.

AF

Los Alamos
Los Alamos National Laboratory
Los Alamos New Mexico 87545

DATE: August 8, 1988
REFER TO: HRD-2-CAS
MAIL STOP: P237
TELEPHONE: (505) 667-6632

Supplement No. 2 to Collaborator Agreement No. COL-2888

Mr. Yehuda Partom
Rafael Ballistics Center
Box 2250
Haifa, ISRAEL

Dear Mr. Partom:

The Laboratory wishes to modify your Collaborator Agreement by extending the expiration date to September 30, 1989, contingent upon Department of Energy (DOE) approval for your continued work at Los Alamos. Please note that the Laboratory obtained DOE approval for you to render services through October 7, 1988. The Dynamic Testing Division is in the process of requesting further approval. Please do not prepare to render services beyond that date until you have been officially notified of this approval. All other terms of the agreement remain unchanged.

Under the terms of this agreement the actual number of fee-paid days will be negotiated directly with you by your sponsoring organization, but may not exceed 130 fee-paid days in any agreement period.

If this is acceptable to you, please sign the original of this supplement and return it to this office; the second copy is for your records.

THE UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

Marti M Browne
Marti M. Browne
Consultant and Affiliate Services

Cy: M-DO, MS P915
M-9, MS P952
Files (2)

Supplement Accepted:

Yhuda Partom
Collaborator

[illegible]
Date

Ref. 15.6.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

June 14, 1988

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Waller:

Enclosed is completed Form IA-473 requesting approval for the following assignment:

NAME: Partom, Yehuda

COUNTRY OF CITIZENSHIP: Israel

TYPE OF ASSIGNMENT: Consultant (Collaborator in Laboratory terminology) From September 12, 1988 thru October 7, 1988.

REMARKS: This assignment will involve a sensitive country but will not involve a sensitive subject.

The research involved is totally unclassified. Required security controls will be in effect during the assignment. Laboratory personnel are advised of DOE requirements governing visits and assignments by foreign nationals by issuance of copies of DOE orders and directives, as issued. The Office Procedures Manual (Section 3.3) contains instructions to Laboratory personnel on all aspects of visits and assignments by foreign nationals as applicable to the Los Alamos National Laboratory.

This letter and enclosures are forwarded for your information and distribution to other Headquarters offices.

Sincerely,

Siegfried S. Hecker
Director

Enclosure - DOE Form IA-473
Security Plan and Maps
ISEC Letter

Cys: D. D. McIntyre, AL, w/enc., MS A906
H. Valencia, IAAO, w/o enc., MS A316
L. Gritzo, M-DO, w/o enc., MS P915
A. Anderson/J. Wackerle, M-9, w/o enc., MS P952
R. Vrooman, ISEC, w/o enc., MS A122
CRS, w/o enc., MS P237
CRM-4 (2), w/enc., MS A150
OS-12, w/enc., MS B236

9/16 per Bill Sprouse — Visit disapproved

Ref. 15.7.

Los Alamos
Los Alamos National Laboratory
Los Alamos,New Mexico 87545

Human Resources Development Division

DATE: August 5, 1987
REFER TO: HRD-2-CAS
MAIL STOP: P237
TELEPHONE: (505) 667-6632

Supplement No. 1 to Collaborator Agreement No. COL-2888

Mr. Yehuda Partom
Rafael Ballistics Center
Box 2250
Haifa, ISRAEL

Dear Mr. Partom:

The Laboratory wishes to modify your Collaborator Agreement by extending the expiration date to September 30, 1988, contingent upon Department of Energy (DOE) approval for your continued work at Los Alamos. Please note that the Laboratory obtained DOE approval for you to render services through August 15, 1987. The Dynamic Testing Division is in the process of requesting further approval. Please do not prepare to render services beyond that date until you have been officially notified of this approval. All other terms of the agreement remain unchanged.

Under the terms of this agreement the actual number of fee-paid days will be negotiated directly with you by your sponsoring organization, but may not exceed 130 fee-paid days in any agreement period. All other terms of the agreement remain unchanged.

If this is acceptable to you, please sign the original of this supplement and return it to this office; the second copy is for your records.

THE UNIVERSITY OF CALIFORNIA
LOS ALAMOS NATIONAL LABORATORY

Marti M. Browne
Marti M. Browne
Consultant and Affiliate Services

Cy: M-DO, MS P915
M-9, MS P952
Files (2)

Yehuda Partom
Collaborator

8/11/87
Date

An Equal Opportunity Employer/Operated by the University of California

Ref. 15.9.

UNIVERSITY OF CALIFORNIA

Los Alamos National Laboratory

COLLABORATOR AGREEMENT
NO. COL-2888

This agreement by and between The Regents of the University of California, a California corporation, acting through the Los Alamos National Laboratory (hereinafter called "University"), and YEHUDA PARTOM (hereinafter called "Collaborator") whose business address is

Rafael ~~Ballistics~~ Center
Box 2250
Haifa, ISRAEL

WITNESSETH

WHEREAS, the University has entered into Contract W-7405-Eng-36 with the United States of America (hereinafter called "Government"), acting through the Department of Energy (hereinafter called "DOE"), providing for the performance of certain research and development work; and

WHEREAS, in furtherance of the performance of the work under said Contract W-7405-Eng-36, the University desires to utilize the expert advice and assistance of Collaborator in the field in which Collaborator has professional qualifications; and

WHEREAS, Collaborator is willing and able to perform such services under the terms and conditions of this agreement.

NOW, THEREFORE, the parties hereto do mutually agree as follows:

ARTICLE I - PERIOD OF SERVICE AND TERMINATION

A. The period during which services are to be rendered under this agreement shall be from July 1, 1987 through September 30, 1987 and may be extended upon the mutual consent of all parties hereto.

B. Either the University or the Collaborator may terminate this agreement at any time by giving the other party written notice of such action.

ARTICLE II - COMPENSATION

A. The University will pay the Collaborator the daily rate of **THREE HUNDRED AND NO/100** ($**-0-**) for each day the Collaborator renders service hereunder ~~including travel time in accordance with current Contract W-7405-Eng-36 travel regulations.~~ A full day of service means the amount of time which effectively interrupts the Collaborator's ordinary pursuits for substantially an entire day. Where parts of a day are involved and the Collaborator can follow his usual business or profession during the rest of the day the University will pay for the period of service approximating the number of hours Collaborator is kept from his normal pursuit. Under this daily rate type contract, payment for eight hours in any one day is the maximum.

B. The Collaborator shall furnish a claim or such other reasonable proof as the University may require setting forth actual time spent in the performance of service under this agreement.

C. Notwithstanding any other provisions of this agreement, University and Collaborator may from time to time agree in writing, without formal modification of the agreement, that Collaborator will not be paid a fee for certain days on which Collaborator renders service.

D. Fee-paid services may not exceed one hundred thirty (130) fee-paid days during a fiscal year.

(Revised 6/83)

Ref. 15.10.

ARTICLE III - CHARACTER AND EXTENT OF SERVICES

A. The Collaborator shall personally render expert advice and assistance (including reports) on such matters and at such point or points and for such periods as requested by the University and as are agreed to by the Collaborator in connection with the performance of Contract W-7405-Eng-36.

B. Whenever Collaborator is performing said services for the University under this agreement, Collaborator will observe and conform to all rules and regulations, including health and safety rules, of the Los Alamos National Laboratory which may then be in effect.

C. It is understood and agreed that Collaborator will not subcontract or otherwise employ anyone to do any of the work called for under this agreement without prior written approval of the University.

D. It is further understood and agreed that Collaborator has entered into this agreement as an independent contractor and that nothing in this agreement shall be construed as creating any other relationship between Collaborator and the University.

ARTICLE IV - TRAVEL

Travel expenses will be reimbursed from point of departure to point of return in accordance with the applicable travel regulations for Contract W-7405-Eng-36, on the submission by the Collaborator of a properly certified travel claim and such other reasonable proof as the University may require. Any changes in this original agreement must be approved in writing prior to commencement of travel.

ARTICLE V - SECURITY

A. Collaborator agrees to conform to all security regulations and requirements of DOE and to be responsible for safeguarding, in accordance with those regulations and requirements, all Restricted Data, Formerly Restricted Data, and other classified information, and protecting against sabotage, espionage, loss and theft of classified documents and material in Collaborator's possession in connection with the performance of work under this agreement. Upon completion or termination of this agreement, or at any time when requested by the University, Collaborator shall transmit to the University any classified matter in Collaborator's possession in connection with the work under this agreement.

B. The term, "Restricted Data", as used in this Article, means all data concerning (i) the design, manufacture, or utilization of atomic weapons; (ii) the production of special nuclear material; or (iii) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to Section 142 of the Atomic Energy Act of 1954.

C. The term "Formerly Restricted Data", as used in this Article, means all data removed from the Restricted Data category under Section 142 d. of the Atomic Energy Act of 1954, as amended.

D. Collaborator shall not permit any individual to have access to Restricted Data, Formerly Restricted Data, or other classified information, except in accordance with the Atomic Energy Act of 1954, as amended, and DOE's regulations and requirements.

E. Criminal Liability. It is understood that disclosure of Restricted Data, Formerly Restricted Data or other classified information relating to the work or services ordered hereunder, or failure to safeguard any Restricted Data, Formerly Restricted Data, or any other classified matter that may come to Collaborator or any person under Collaborator's control in connection with work under this agreement, may subject Collaborator, his agents, employees and subcontractors to criminal liability under the laws of the United States. (See the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011, 18 U.S.C. Sections 793 and 794; and Executive Order 11652.)

F. In the performance of the work under this agreement, the Collaborator shall assign classifications to all documents, material and equipment originated or generated by the Collaborator in accordance with classification guidance furnished to the Collaborator by DOE and the University.

Ref. 15.11.

ARTICLE VI - PATENTS AND INFORMATION

A. Whenever any discovery or invention is made or conceived by Collaborator in the course of, or under the terms of this agreement, Collaborator shall furnish the University promptly with complete information thereon, and DOE shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title to and rights in and to any invention or discovery and any patent application or patent that may result. The judgment of DOE on such matters shall be accepted as final, and Collaborator agrees that Collaborator will execute all documents and do all things necessary or proper to carry out the judgment of DOE.

B. No claim for pecuniary award or compensation under the provisions of the Atomic Energy Act of 1954, as amended, shall be asserted by Collaborator with respect to any discovery or invention made or conceived in the course of or under this agreement.

C. Except as otherwise authorized in writing by DOE, Collaborator will obtain patent agreements to effectuate the purposes of Paragraphs A, B, and F of this Article VI from all persons who perform any part of the work under this agreement, except such clerical and manual labor personnel who will not have access to technical data.

D. With respect to any U.S. Patent Application filed by the Collaborator on any invention or discovery made or conceived in the course of this agreement, the Collaborator will incorporate in the first paragraph of the U.S. Patent Application the following statement:

> "The invention described herein was made in the course of, or
> under, a subcontract under Prime Contract W-7405-Eng-36 with
> the Department of Energy."

E. All drawings, sketches, designs, design data, specifications, notebooks, technical and scientific data, and all photographs, negatives, reports, findings, recommendations, data and memoranda of every description relating thereto, as well as all copies of the foregoing, relating to the work or any part thereof, shall be subject to inspection by the University and DOE at all reasonable times; and the Collaborator shall afford the University and DOE proper facilities for such inspection; and, further shall be the property of the Government and may be used by the Government for any purpose whatsoever without any claim on the part of the Collaborator for additional compensation and, subject to the Collaborator's right to retain a copy of said material where not classified (such retention to be subject to the security, patent and use of information provisions of this agreement), shall be delivered to the University or otherwise disposed of by the Collaborator, either as the University and/or Government may from time to time direct during the progress of the work or, in any event, as the University and/or Government shall direct upon completion or termination of this agreement.

F. It is recognized that during the course of the work under this agreement or thereafter, the Collaborator may from time to time desire to publish, within the limits of security requirements, information regarding scientific or technical developments made or conceived in the course of or under this agreement. In order that public disclosure of such information will not adversely affect the patent interests of DOE or the University, patent approval for release and publication shall be secured from DOE prior to any such release or publication.

G. Use of Information. Except as specifically authorized by this agreement, or as otherwise approved by the University, information and other data developed or acquired by, or furnished to, Collaborator in the performance of this agreement, shall be used by Collaborator only in connection with the work under this agreement.

H. Any information prepared for publication by Collaborator must be submitted to the University classification section for review and approval prior to publication.

Ref. 15.12.

ARTICLE VII - OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this agreement or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

ARTICLE VIII - EQUAL OPPORTUNITY

Unless this agreement is exempted under the rules and regulations of the Secretary of Labor issued under Section 204 of Executive Order 11246 of September 24, 1965, the contractual provisions prescribed by Section 202 of Executive Order 11246 are incorporated herein by reference.

ARTICLE IX - COVENANT AGAINST CONTINGENT FEES

Collaborator warrants that no person or selling agency has been employed or retained to solicit or secure this agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by Collaborator for the purpose of securing business. For breach or violation of this warranty, the University shall have the right to annul this agreement without liability or in its discretion to deduct from the agreement price or consideration or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE X - EXAMINATION OF RECORDS

The Collaborator agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under this agreement or of the time periods specified in Part 1-20 of the Federal Procurement Regulations (41 CFR Part 1-20), whichever expires earlier, have access to and the right to examine any directly pertinent books, documents, papers and records of the Collaborator involving transactions related to this agreement: provided, however, that this Article shall not apply unless this agreement exceeds $2,500.00. The periods of access and examination described herein shall continue until any disputes, appeals, litigation, claims or Comptroller General exceptions have been disposed of.

ARTICLE XI - ASSIGNMENT

The University reserves the right to assign all or any part of its interest in and to this agreement to the Government or to any agency or commission thereof. The Collaborator may not assign or transfer this agreement, any interest therein or claim thereunder without the prior written approval of the University.

ARTICLE XII - TAXES

The parties agree that the compensation stated herein includes all applicable taxes, and that the compensation will not be changed hereafter as the result of failure to include therein any applicable tax, or as the result of any change in the Collaborator's tax liabilities.

ARTICLE XIII - CONFLICT OF INTEREST

A. Collaborator affirms that to the best of his knowledge, there exists no actual or potential conflict between Collaborator's private interests (including corporate stockholdings) and his services under this agreement, and in the event of change in either his private interests or service under this agreement, Collaborator will raise with the University any question regarding possible conflict of interest which may arise as a result of such change.

B. Collaborator further affirms that he is not concurrently performing work on a full-time annual employment basis with any other organization under a cost-type contract with DOE.

Ref. 15.13.

IN WITNESS WHEREOF, the parties have executed this agreement.

Collaborator
Yehuda Avtom

Social Security Number
036-36-7093

Date May 26, 1987

THE REGENTS OF THE
UNIVERSITY OF CALIFORNIA

By K Jean Holliway
Personnel Administration Division
Los Alamos National Laboratory

"Pursuant to Federal Privacy Act of 1974, you are hereby notified that disclosure of your social security number is mandatory. Disclosure of the social security number is required pursuant to Section 6011 and 6051 of Subtitle F of the Internal Revenue Code and Regulation 4, Section 404.1256, Code of Federal Regulations, under Section 218, Title II of the Social Security Act, as amended. The social security number is used to verify your identity. The principal uses of the number shall be to report payments and income taxes withheld to Federal and State governments."

Ref. 15.14.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

REQUEST FOR UNCLASSIFIED VISIT OR ASSIGNMENT BY A FOREIGN NATIONA

This form must be completed for every unclassified visit or assignment by a foreign national to the Los Alamos National Laboratory. DOE For IA-473 will also be required for (1) all assignments; (2) visits by nationals of sensitive countries; (3) visits involving access to sensitive subjec as defined in DOE Order 1240.2; and (4) visits by high-level foreign nationals.

PART I

1. Name *(Last, First, Middle)* PARTOM, Yehuda	Title *(Individual's Position)* Deputy Division Ldr.	Dates *(in Los Alamos)* 9/10/88-10/9/88
2. Country of Citizenship ISRAEL	Request for ☐ Visit ☒ Assignment	Will access to sensitive subjects *(DOE Order 1240.2)* be required? ☐ Yes ☒ No

3. Laboratory Contact *(Name)* Jerry Wackerle	Group and Organization Code M-9	Mail Stop P952	Telephone 7-4477

4. Locations *(Tech Areas & Bldgs.)* ☒ Nonsecurity ☐ Security (Requires Form 864)

5. If Assignment, check appropriate box ☐ LTVSM ☐ Temp. Employee ☐ Reg. Employee ☐ Student
☐ Alien Guest Scientist ☒ Collaborator ☐ Consultant ☐ Official Visitor ☐ Other

6. Justification *(Not required when Form 1A-473 is used.)*
See form IA-473

7. Payment Required ☒ Yes ☐ No	Cost Code 9109	Program Code CX21
8. Employer's Name Rafael Ballistic Center	Department Division 20	

9. Employer's Address *(Street, City, State, ZIP, Country)*
P. O. Box 2250
Haifa, Israel

APPROVALS

Group and Division Leader signatures below certify that required security controls will be in effect during the visit/assignment. When a security plan is required, the approving officials assure that (1) a prior inspection of the area to be visited will be performed to insure that any item which might disclose classified information has been removed; (2) signs will be posted in the area to be visited cautioning employees that an uncleared visitor is in the area; and (3) escort responsibilities and badging procedures will be reviewed by employees involved in the visit.

Group Leader	Date 5/23/88	Associate Director	Date
Division Leader "Original Signed by Dennis J. Erickson"	Date 5/24	Director	Date

PART II - REPORT

Visit

☐ Took Place ☐ Cancelled

Assignment

Action/Effective Date:		Termination/Effective Date:	
☐ Entrance on Duty	☐ Will Not Report	☐ Completed Assignment	☐ Granted Leave of Absence
☐ Change in Status		☐ Acquired US Perm. Res. Status	☐ Other (Specify)

Form #982 (4/88)

Ref. 15.15. 9

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

AFFILIATE INVITATION REQUEST

Date: 5/12/88
Cost Code: 9109 | Program Code: CX21
Social Security Number: 036-36-7093

PLEASE SEND ALL COPIES TO HRD-2, MS P237 FOR DISTRIBUTION

Affiliate's Name (Last, First, Middle) PARTOM, Yehuda	Title/Organizational Unit Deputy Division Ldr. Division 20	Preferred Address (Official Visitors Only) X Business ___ Home
Employer (Complete Name) Rafael Ballistic Center		
Business Address (Street, City, State, ZIP) Box 2250, Haifa, ISRAEL		Telephone Number (Include Area Code) 9-011-972-4-795027
Home Mailing Address (Street, City, State, ZIP) 33 Palmach Street, Haifa, ISRAEL		Telephone Number (Include Area Code) 9-011-972-4-241931
Dates of Service 9/12/88 to 10/7/88 ___ Intermittent	Services are to be rendered at X Los Alamos ___ Home Base ___ Other (Specify) ___	
Category (Check One) ___ Official Visitor ___ Consultant X Collaborator ___ SARA ___ Other (Specify) ___		Citizenship ISRAEL
Foreign Nationals Only DOE Approval (Form IA-473 or 982) has been X Requested (Date) ___ ___ Granted (Date) ___	Visa type required (For J-1, submit Form 1068) J-1	Visa type held B-1
Name of Contact(s) Jerry Wackerle	Sponsoring Organization M-9	Telephone Number and Mail Stop 7-4477 P952
Specific services to be rendered Collaboration on reaction-rate modeling for insensitive explosives		

AUTHORIZED PAYMENTS AND REIMBURSEMENTS

Travel reimbursement authorized: X Yes ___ No
Travel reimbursement authorized From Albuquerque, NM to Los Alamos to Albuquerque, NM
Travel reimbursements authorized away from Los Alamos From ___ To ___ To ___
Subsistence ___ Yes X No
Rental Car (Local Transportation) X Yes ___ No
Maximum travel, subsistence, rental car not to exceed $800.00
* Visitor Category Only
Honorarium ___ Yes X No $___
Stipend (in lieu of transportation, subsistence, etc.) ___ Yes X No $___
AUTHORIZED SIGNATURE (Division, AD, DD, DIR) 5/24/88
Typed Name/Title: D. J. Erickson, Deputy M-Div Ldr
Date: 5/24/88

Comments:
Partom is attending a meeting in Albuquerque in October, and his organization has agreed to cover his roundtrip airfare to Albuquerque.

FOR TRAVEL USE ONLY
Claim Number ___

Received	Signature	Date

Form Number 910 (10/86) CONSULTANT AND AFFILIATE SERVICES ST-2624

No DOE approval — not visiting Lab property
No Div authorization

Ref. 15.16.

U.S. DEPARTMENT OF ENERGY
Office of International Affairs

OMB Control N
1910-21

REQUEST FOR FOREIGN NATIONAL UNCLASSIFIED VISIT OR ASSIGNMENT

This form is authorized by the Department of Energy Organization Act (P.L. 95-91) and the Atomic Energy Act of 1954 (P.L. 83-703). The form must be completed for all visits involving sensitive countries, subjects and facilities and for all assignments. The Department of Energy (DOE) does not consider the data to be confidential. If more space is needed for any item, use the remarks/continuation section. PLEASE READ THE INSTRUCTIONS ON THE REVERSE SIDE BEFORE COMPLETING THIS FORM.

PART I: IDENTIFICATION *(To be completed by requester or agent acting on his/her behalf)*

1. Name of Requester *(Last, First, Middle)*: PARTOM, Yehuda

2. Country of Citizenship: ISRAEL

3a. Date of Birth *(Mo, Da, Yr)*: 11/24/34

3b. Place of Birth *(City, State, Country)*: TEL-AVIV, ISRAEL

4. Date of Request *(Mo, Da, Yr)*: 5/12/88

3c. Passport Number: 2744753

3d. Expiration Date *(Mo, Da, Yr)*: 5/8/90

3e. Port of Entry: J.F.K. Airport

5. Knowledge of English *(Check one line for each column)*	Speaking Ability (a)	Comprehension (b)	Reading Ability (c)	Writing Ability (d)
(1) Fluently/Easily	X	X	X	X
(2) Not Fluently/Not Easily				
(3) None				

6a. Name and Address of Current Employer
State of Israel Ministry of Defence
Armament Development Authority
Rafael Ballistics Center
Box 2250
Haifa, ISRAEL

6b. Name and Address of Place of Work *(if different from 6a)*

6c. Kind of Business or Organization *(e.g. government, etc.)*: Government

6d. Division, Department or Subunit You Work In: Division 20

tle, Position or Description of Duties: uty Division Leader

6f. Field of Research: Shock Waves

6g. Work Telephone and/or Telex No.: 9-011-972-4-795027

7a. Have you been in communication with anyone in DOE or an affiliated organization concerning this visit/assignment?
(1) ☒ Yes . . . *Answer 7b.* (2) ☐ No . . . *Skip to 8*

7b. Name, Address and Telephone, if possible, of Person
Jerry D. Wackerle, 505-667-4477
Group M-9, Los Alamos National Laborato
Los Alamos, NM 87545

8a. This request is for *(Check appropriate box)* (1) ☐ A Visit (2) ☒ An Assignment

8b. Organization(s) and Location(s) to be visited or assigned
Los Alamos National Laboratory
Los Alamos, NM 87545
Assigned to Group M-9
(will work in uncleared area)

8c. Desired date(s) of visit or assignment
9/12/88
thru
10/7/88

8d. Subjects to be discussed at each location, or Statement of research in which you wish to be assigned
Will continue collaboration in fundamental research on the shock-induced decomposition initiation and detonation of heterogeneous explosives. Investigations are centered on devising of theoretical models for hotspot behavior, incorporating models into continuum numerical hydrodynamic calculations and testing of models with M-9 experimental data.

9. A brief description of your technical qualifications and experience in relation to your visit/assignment.
(If an assignment, include university/college training with degrees and dates conferred.)
B. Sc., M. Sc., D. Sc., Technion, Haifa, 1959, 1961, 1967, 1968/9, 1976/7: Research associate, at Brown U. Eng. Dept., Providence, R. I.; 1970-present: Adjunct Prof. Technion, Mech. Eng.; 1961-present: Research Eng. at Rafael;1972- of Explosives Dept; 1984-present Deputy Division Head. Visiting SM at M-9, Oct 85 to Oct 86. Technical experience in: Shock-wave physics, computational physics, impact dynamics, plastodynamics, terminal ballistics; has authored or coauthored 54 journal papers in thes fiel

10. Your visit/assignment will be on whose behalf?
(1) ☐ Educational Institution (2) ☐ Industry (3) ☐ Scientific or technical organization (4) ☐ Yourself
(5) ☒ Government (6) ☐ Other - *Specify* →

11a. Is this visit/assignment part of any exchange program or international agreement?
(1) ☐ Yes . . . *Answer 11b* (2) ☒ No . . . *Skip to 12*

11b. State program or agreement
Ref. 15.17.

12. Name and Address of financial sponsor if different from 8a

1. *Assignments Only:)* Will you require an Exchange Visitor (J-1) visa?
(1) ☒ Yes . . . *Answer 13b*
(2) ☐ No . . . *Skip to 14*

13b. (1) Names, (2) Dates and places of birth, (3) Relationships and (4) Citizenship of family members who will accompany you or who may join you at a later date
Partom, Illya; 4/17/33, Egypt; Wife, ISRAEL

PART II: VISIT/ASSIGNMENT DATA *(To be completed by requesting DOE office or contractor)*

14. Justification of visit/assignment, including benefit to DOE program(s) Group M-9 has the fundamental modeling of the initiation and detonation of explosives as a major aspect of its mission. The work is supported by National Security Programs, and is essential to progress in improved selection and tailoring of safer and more effective high explosives for Los Alamos applications. During his term as a long-term visiting staff member of Los Alamos Group M-9, (10/85 to 10/86 and subsequent visit in 1987), Partom advanced his "surface burning" model of heterogeneous explosives to one that effectively predicted the initiation and detonation behavior of

15a. Location of visit/assignment *(Give organizational unit and building number)*
Group M-9; TA-4C, Bldg. 1 (Partom wil work in a special uncleared area TA-6-61)

15b. Name and telephone number *(including area code)* of (1) supervisor responsible for assignment, or (2) principal escort for visit
J. D. Wackerle (505)667-4477

15c. Name and Telephone number *(incl. area code)* of cognizant program contact at DOE Headquarters
John Rudolph 8-233-3618

15d. Will visit/assignment require access to a secure area(s)?
(1) ☐ Yes . . . *State area(s) and nature of security interest within the area(s)*
(2) ☒ No

15e. Cost of visit/assignment to DOE
0.00

ne and title of requesting DOE Official or contractor
S. ecker, Director, Los Alamos

17. Contract Number
W-7405-ENG-36

18. Signature of Requesting DOE Official or Contractor

19. Date Signed *(Mo, Da, Yr)*

PART III: APPROVAL/DISAPPROVAL *(To be completed by approval authority)*

20. Visit/Assignment Request is
(1) ☐ Approved (2) ☐ Disapproved

21. Limitations or restrictions, if any, or reasons for disapproval

22. Name

23. Title and Organization

24. Signature

25. Date Signed

PART IV: ADDITIONAL DATA

26. Concurrences Required or Desired

27. Remarks/Continuation (Continued from 14) practical explosives, particularly for insensitive TATB compositions. The effective modeling of shock-induced re-
on rate is an important aspect of M-9 explosive characterization mission, and continued collaboration with Partom is of great benefit to this purpose.

Copy 1 (white)-Approval Authority; Copy 2 (blue)-DOE Office of International Affairs; Copy 3 (green)-DOE Office of Defense Programs; Copy 4 (yellow)-Cognizant DOE Program Office; Copy 5 (pink)-Cognizant DOE Operations Office/National Laboratory; Copy 6 (orange)-Requester

-473 (11-85)

Ref. 15.18.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Human Resources Development Division

DATE: May 7, 1987
IN REPLY REFER TO: HRD-2-CAS
MAIL STOP: P237
TELEPHONE: (505) 667-6632

Yehuda Partom
Rafael Ballistics Center
Box 2250
Haifa, ISRAEL

State of Israel Ministry of Defence
Armament Development Authority

Dear Mr. Partom:

Dr. Ludwig A. Gritzo, Dynamic Testing Division Leader, has requested that I contact you regarding your willingness to render services to this Laboratory as a Collaborator at a daily fee of $300.00. Such services as you would be asked to render would be arranged at your convenience.

Enclosed are two copies of Agreement No. COL-2888. If this Agreement meets with your approval, please sign the original and return it to this office; the second copy is for your records. Under the terms of this Agreement, the actual number of fee-paid days will be negotiated directly with you by your host Division, but may not exceed 130 fee-paid days in any Agreement period.

Travel reimbursements will be made in accordance with the enclosed Reimbursement Policy. Please note that no subsistence payments will be made under the terms of this Agreement. For additional information regarding travel reimbursements, please contact the Visitor Payment Section of the Travel Group at (505) 667-4138. For information regarding fee payments, contact the Payroll Group at (505) 667-4594.

A J-1, Exchange Visitor, visa will be required for your services to this Laboratory. To assist in the completion of the visa petition, please complete and return the enclosed Form 1068, Information to Visit the United States, as soon as possible so that we may prepare your IAP-66 (J-1 visa).

Your visit to the Laboratory is contingent upon Department of Energy (DOE) approval. The Dynamic Testing Division is in the process of requesting approval from July 1, 1987 to September 30, 1987. Please do not prepare to leave for the United States until you have been officially notified of this approval.

Ref. 15.19.

If you have any questions regarding the details of this Agreement, please call the Consultant and Affiliate Services Office at (505) 667-6632. Please call your Laboratory contact if you have any questions pertaining to travel arrangements or temporary living accommodations for your visit.

Sincerely yours,

K Jean Holliway

for Marti M. Browne
Consultant and Affiliate Services

Enclosures: Agreement (2 copies)
Reimbursement Policy
Tax Information
Form 1068

Cy: M-DO, MS P915
M-9, MS P952
Files (2)

Ref. 15.20.

Los Alamos

Los Alamos National Laboratory
Alamos, New Mexico 87545

AFFILIATE INVITATION REQUEST

PLEASE SEND ALL COPIES TO HRD-2, MS P237 FOR DISTRIBUTION

Date 5/7/87
Cost Code 9109
Program Code CX21
Social Security Number 036-36-7093

Affiliate's Name (Last, First, Middle) Partom, Yehuda
Title/Organizational Unit Deputy Division Ldr. Division 20
Preferred Address (Official Visitors Only) X Business ___ Home
Employer (Complete Name) Rafael Ballistic Center
Business Address (Street, City, State, ZIP) Box 2250, Haifa, ISRAEL
Telephone Number (Include Area Code) (9)011-972-4-708166
Home Mailing Address (Street, City, State, ZIP) 33 Palmach St., Haifa, ISRAEL
Telephone Number (Include Area Code) (9)011-972-4-241931
Dates of Service 7/27/87 to 8/14/87 ___ Intermittent
Services are to be rendered at X Los Alamos ___ Home Base ___ Other (Specify) ___
Category (Check One) ___ Official Visitor ___ Consultant X Collaborator ___ SARA ___ Other (Specify) ___
Citizenship ISRAEL
Foreign Nationals Only DOE Approval (Form IA-473 or 982) has been X Requested (Date) 4/23/87 ___ Granted (Date) ___
Visa type required (For J-1 submit Form 1068) J-1
Visa type held B-1
Name of Contact(s) Jerry D. Wackerle
Sponsoring Organization M-9
Telephone Number and Mail Stop 7-4477 P952
Specific services to be rendered Collaborating in extending explosives reaction-rate model to multiple components and incorporating into a 1D hydrocode.

AUTHORIZED PAYMENTS AND REIMBURSEMENTS

Travel reimbursement authorized X Yes ___ No
Travel reimbursement authorized From ___ to Los Alamos to ___ See comments
el reimbursements authorized away from Los Alamos ___ To ___ To ___
stence ___ Yes X No
Rental Car (Local Transportation) X Yes ___ No
Maximum travel, subsistence, rental car not to exceed $1,000

Official Visitor Category Only
Honorarium ___ Yes X No $___
Stipend (in lieu of transportation, subsistence, etc.) ___ Yes X No $___

AUTHORIZED SIGNATURE (Division AD, DD, DIR) L A Gritzo
Typed Name/Title L. A. Gritzo, M-Div Ldr
Date 5/12/87

Comments
Partom is attending the APS Topical Conference at Monterey, CA, at his organizations expense. We propose to pay him the additional airfare required to fly him into and out of Albuquerque on his return.

FOR TRAVEL USE ONLY **Claim Number** ___

Received	Signature	Date

Form Number 910 (10/86) CONSULTANT AND AFFILIATE SERVICES ST 2624

Ref. 15. 21.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

April 30, 1987

Mr. David B. Waller, Assistant Secretary
International Affairs and Energy Emergencies, IE-1
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Waller:

Enclosed is completed Form IA-473 requesting approval for the following assignment:

NAME: Partom, Yehuda

COUNTRY OF CITIZENSHIP: Israel

TYPE OF ASSIGNMENT: Consultant (Collaborator in Laboratory terminology) July 25, 1987 to August 15, 1987.

REMARKS: This assignment will involve a sensitive country but will not involve a sensitive subject.

The research involved is totally unclassified. Required security controls will be in effect during the assignment. Laboratory personnel are advised of DOE requirements governing visits and assignments by foreign nationals by issuance of copies of DOE orders and directives, as issued. The Office Procedures Manual (Section 3.3) contains instructions to Laboratory personnel on all aspects of visits and assignments by foreign nationals as applicable to the Los Alamos National Laboratory.

This letter and enclosure are forwarded for your information and distribution to other Headquarters offices.

Sincerely,

Siegfried S. Hecker
Director

Enclosure - DOE Form IA-473

Cys:
D. D. McIntyre, AL, MS A906, w/enc.
H. Valencia, LAAO, MS A316, w/o enc.
L. A. Gritzo, M-DO, MS P915, w/enc.
R. Rabie/J. Wackerle, M-9, MS P952
CAS, MS P237, w/enc.
CRM-4 (2), MS A150, w/enc.
OS-4, MS B236, w/enc.

The assignment requested
above has been approved.

Donald D. McIntyre

Donald D. McIntyre
Director, SD
Albuquerque Operations

An Equal Opportunity Employer / Operated by University of California

Ref. 15.22 ✓

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

LABORATORY AFFILIATE REQUEST

TO: Consultant and Affiliate Services, MAIL STOP P232

COL-2888

Affiliate's Name (Last, First, Middle): Partom, Yehuda
Social Security Number: 036-36-7093
Home Address (Street, City, State, ZIP Code): 33 Palmach St., Haifa, ISRAEL
Business Address (Street, City, State, ZIP Code): Rafael Ballistics Center, Box 2250, Haifa ISRAEL
Preferred Mailing Address: Home [✓ Business]
Business Telephone Number: (9)011-972-4-708166
Home Telephone Number: (9)011-972-4-241931
Position Title and Department: Deputy Division Leader for R&D; Division 20
Clearance Required: Yes [✓ No]
Badge Category: I II III
Previous Clearance: Yes [✓ No]
If yes, Date of Birth:
Where Clearance was issued:
When Clearance was issued:
DOE Number:
Former Laboratory Employee: [✓ Yes] No
Retired Laboratory Employee: Yes No
Former Laboratory Organization: M-9
End of Service Date: 10/17/86
Citizenship: ISRAEL
Country of Residence: ISRAEL
Visa Required: [✓ Yes] No
DOE Approval: [✓ Requested] Obtained
B1 B2
J-1 (Dates of visit):
Other:
Requested Beginning Agreement Date: July 1, 1987
Ending Agreement Date: Sept. 30, 1987
Approximate Date of First Visit: July 27, 1987
ability/Source of Funds: [✓ Yes] No CX21, NSP
Anticipated Number of Days of Service: 15
Fee Status: [✓ Yes] No
Recommended Fee Per Day: $ 300.00
Normal Fee to Others Per Day: $ 282 to 308
Reimbursements (Yes or No): yes Travel yes Rental Car
Subsistence Payments: Yes [✓ No]
Existing Affiliate or Contract Arrangements With Other DOE or DOE Contractors (If yes, specify): Yes [✓ No]
Estimated Total Dollar Cost: $ 6,000
Affiliate Category Requested: [✓ Collaborator] Consultant Loaned Employee Student
Statement of Individual's Relevant Expertise and the Organizations Need for the Agreement: Partom is uniquely familiar with the reaction rate model we are studying and with the associated characteristics code.
Expertise Code:
Description of Services to be Rendered: Continued collaboration on explosives reaction-rate modeling, extending Partom's "surface burning" model to multiple components, extending the use of his unique characteristics code, and implementing his model into a 1D hydrocode.
Statement as to whether services are available within Laboratory: Expertise in this model and characteristics code does not exist elsewhere in the Laboratory.
Laboratory Contact: Jerry Wackerle
Mail Stop: P952
Telephone: 7-4477
Cost Center: 9109
Program Code: CX21
Organization Code:
Sponsoring Organization: M-9
Other Laboratory Assignments, if any: none
Sponsoring Organization: R. L. Rabie, Group Leader
Signature: Ronald L Rabie
Date: 4/28/87
ion Approval: A. Gritzo, M-DO
Signature: LAGritzo
Date: 4/29/87
ociate Director Approval:
Signature:
Date:
Director's Office Approval:
Signature:
Date:

Form Number 1098 (6/85)   DISTRIBUTION DIVISION CRM-4 SPONSORING

Ref. 15.23.

U.S. DEPARTMENT OF ENERGY
Office of International Affairs

OMB Control
1910-2

REQUEST FOR FOREIGN NATIONAL UNCLASSIFIED VISIT OR ASSIGNMENT

This form is authorized by the Department of Energy Organization Act (P.L. 95-91) and the Atomic Energy Act of 1954 (P.L. 83-703). The form must be completed for all visits involving sensitive countries, subjects and facilities and for all assignments. The Department of Energy (DOE) does not consider the data to be confidential. If more space is needed for any item, use the remarks/continuation section. PLEASE READ THE INSTRUCTIONS ON THE REVERSE SIDE BEFORE COMPLETING THIS FORM.

PART I: IDENTIFICATION *(To be completed by requester or agent acting on his/her behalf)*

1. Name of Requester *(Last, First, Middle)*: Partom, Yehuda

2. Country of Citizenship: ISRAEL

3a. Date of Birth *(Mo, Da, Yr)*: 11/24/34

3b. Place of Birth *(City, State, Country)*: TEL-AVIV, ISRAEL

4. Date of Request *(Mo, Da, Yr)*: 4/23/87

3c. Passport Number: 2744753

3d. Expiration Date *(Mo, Da, Yr)*: 5/8/90

3e. Port of Entry: J.F.K. Airport

5. Knowledge of English *(Check one line for each column)*	Speaking Ability (a)	Comprehension (b)	Reading Ability (c)	Writing Ability (d)
(1) Fluently/Easily	X	X	X	X
(2) Not Fluently/Not Easily				
(3) None				

6a. Name and Address of Current Employer:
State of Israel Ministry of Defence
Armament Development Authority
Rafael Ballistics Center
Box 2250
Haifa, ISRAEL

6b. Name and Address of Place of Work *(if different from 6a)*:

6c. Kind of Business or Organization *(e.g. government, etc.)*: Government

6d. Division, Department or Subunit You Work In: Division 20

Title, Position or Description of Duties: puty Division Leader

6f. Field of Research: Shock Waves

6g. Work Telephone and/or Telex No.: 04-708166 or 04-795827

7a. Have you been in communication with anyone in DOE or an affiliated organization concerning this visit/assignment?
(1) ☒ Yes . . . *Answer 7b.* (2) ☐ No . . . *Skip to 8*

7b. Name, Address and Telephone, if possible, of Person:
Jerry D. Wackerle, (505)667-4477
Group M-9, MS P952, Los Alamos Nationa
Laboratory, Los Alamos, NM 87545

8a. This request is for *(Check appropriate box)* (1) ☐ A Visit (2) ☒ An Assignment

8b. Organization(s) and Location(s) to be visited or assigned:
Los Alamos National
Laboratory
Los Alamos, NM 87545
Assigned to Group M-9
(will work in uncleared
area)

This assignment will not involve access to sensitive subjects as defined in DOE Order 1240.2.

8c. Desired date(s) of visit or assignment:
July 27
through
August 14,
1987

8d. Subjects to be discussed at each location, or Statement of research in which you wish to be assigned:
Will continue collaboration in fundamenta
research on the shock-induced decompositi
initiation and detonation of heterogeneou
explosives. Investigations are centered
on devising of theoretical models for
hotspot behavior, incorporating models
into continuum numerical hydrodynamic
calculations and testing of models with
M-9 experimental data.

9. A brief description of your technical qualifications and experience in relation to your visit/assignment. *(If an assignment, include university/college training with degrees and dates conferred.)*

B. Sc., M. Sc., D. Sc., Technoin, Haifa, 1959, 1961, 1967. 1968/9, 1976/7: Research associate, at Brown U. Eng. Dept., Providence, R. I.; 1970-present: Adjunct Prof. Technoin, Mech. Eng.; 1961-present: Research Eng. at Rafael;197 d of Explosives Dept; 1984-present Deputy Division Head. Visiting SM at M-9, Oct 85 to Oct 86. Technical experience in: Shock-wave physics, compu tational physics, impact dynamics, plastodynamics, terminal ballistics; has authored or coauthored 54 journal papers in these fiel

10. Your visit/assignment will be on whose behalf?
(1) ☐ Educational Institution (2) ☐ Industry (3) ☐ Scientific or technical organization (4) ☐ Yourself
(5) ☒ Government (6) ☐ Other - *Specify* →

Ref. 15.24.

Interoffice Memorandum

: RONALD I RABIE
ALITA M ROACH

: MARTI M BROWNE

Memo. 53433011690FV48
Date: Fri 17 Apr 1987 5:[illegible] PM PDT
From: CHRISTINE A SEEMAN*
Dept: PA-13
Tel: 7-[illegible]
Adr: P227

bject: AFFILIATE - YEHUDA PARTOM

UESTION: What daily rate should the Lab pay Yehuda Partom

PTIONS:

. Daily fee based on monthly salary ($2916.67) paid
Lab in FY'86 while Partom was on sabbatical.

916.67 divided by 21.667 times 1.15 $154.[illegible]

ion 1 with 5% fee increase (fee increase permitted
Director's Office approval. $162.55

Daily fee based on work experience and degree using
oratory salary scales. For many reasons this is the
eferred method for determining daily fees for foreign
tionals.

a. PhD plus 24 (median)

63,683 divided by 12 divided by 21.667 times 1.15 $282.00

b. PhD plus 24 (90%)

69,616 divided by 12 divided by 21.667 times 1.15 $309.00

e included the 90% option -- which is not exactly kosher
but it is the only way the system has to provide for
tom's "AD" type responsibilities. I would recommend the
ly fee of $282.

Daily fee based on annual salary in Israel.

recommended per prior discussions. N/A

No fee

Not a possibility per prior discussions. N/A

Ref. 15.25.

ffiliate policy is flexible enough to permit you to pay a daily fee nd also set financial limits. For example, you can offer to pay rtom a daily fee of $282.00 (Option 7) but only up to a certain

llar limit of $3,500.00. This is something worth considering; it becoming more common practice as funding becomes tighter. You y not wish to do this with Partom, but can elect this option for other affiliate later.

vel reimbursements, subsistence payments and rental car: You may ct to pay ANY or ALL. Also, you may elect to set financial limits n daily fees above. Most commonly, a sponsoring organization may t to pay subsistence to a maximum of $1,500 for a period of 30 rather than the allowable $2,100.

all, you have two other N-? consultants with them whose daily fees may wish to compare Partom, i.e., their services indicate [illegible] work:

Hershkowitz - $295.00

Kumar - $262.00

pe this helps. Sorry it's taken so long; I've been swamped.

Ref. 16.1.

```
F37-0-564A                  LOS ALAMOS NATIONAL LABORATORY AFFILIATE INFORMATION SYSTEM          10/07/88
                                              ACCOUNTING PAYMENT DETAIL
Status: A                                     09/01/88 Thru 09/30/89                 Daily-Fee  :  300.00
Name: PARTOM YEHUDA                             Agr-No: COL2888                      Tot-Fee-Days:

Cost   Prog   Exp  Sch    Begin    End      Check    Check     Gross     - Payment Type -   Withholding   Net        Fee
Code   Code   Cd   Nbr    Period   Period   Date     Number    Amount    Split Retro Credit  Amount       Amount     Days

 9109  CX21   23   136    091288   091688   091688   202271    1500.00                        450.00      1050.00    5.00
 9109  CX21   23   135    091988   092388   092688   202401    1500.00                        450.00      1050.00    5.00
                                                              ----------                    ---------   ----------  -------
                                                     Totals    3000.00                        900.00      2100.00   10.00




                                                  Enter <N>New Selection or <E>Exit:
      :equired
B
```

Ref. 16.2.

```
F37-0-560A LOS ALAMOS NATIONAL LABORATORY AFFILIATE INFORMATION SYSTEM  04/20/88
                           Retrieve General Information            UPDATED 09/29/87

Agreement Number: COL2888  Agree-Status: A  Name: PARTOM YEHUDA
Suppl No: 01  Suppl Date: 08/11/87   Citizenship: ISRAEL

EMPLOYER:  RAFAEL BALLISTICS CENTER          Dept: DIVISION 20 BOX 2250
Street: .                                      City    : HAIFA
State : ISRAEL                 Zip:            Ctry-Cd :     Phone: (   )   -

Type of Employer     : FOREIGN GOVT. AGENCY   Major Field  : PHYSICAL SCIENCE
Sponsoring Org       : M-9                    LANL Assgnmts:
Former LANL Employee: TERMINATED              Annual Salary:  35000.00
Former DOE  Employee: NO
VISA HELD INFO: Type: J1      Expiration Date: 08/21/87  Badge Catgory:
CLEARANCE INFORMATION: Type:        Req Date: 03/28/86  Approval Date: 05/31/79
ALIEN INFORMATION:      Appr: A     Req Date: 04/30/87  Approval Date: 05/08/87

Init-Beg-Agr-Date: 07/01/68   Initial Max-Days: 130.00   Init-Daily-Fee:
Cur-Beg-Agr-Date : 10/01/87   Cur-End-Agr-Date: 09/30/88 Cur-Daily-Fee :  300.00
Cur-Fytd-Compens :                                       Cur-Fytd-Days :
Extension-Days   :                                       Fee Status    : F
                        Enter <N>New selection or <E>Exit:
```

Ref. 16.3.

R36-1-321A

LOS ALAMOS NATIONAL LABORATORY TRAVEL SYSTEM
TRAVEL EXPENSE WORKSHEET

TRAVEL GROUP, FIN-8
MAIL STOP P234

	Z number	CC	PRGM	TRIP #		
TOM YEHUDA	036367093	9109	CX21	273277	LOS ALAMOS NEW	10/06/8

ITINERARY				
SCHEDULED			ACTUAL	
CITY	DATE	TIME	DATE	TIME

ADVANCES	
Previous Cash Advance	202.08
Cash Advance	597.92
Total Advances	800.00

yeluda Parton
SIGNATURE DATE

OFFICIAL BUSINESS *(Exclude travel time en route)*

Beg. date ______ Time ______
End date ______ Time ______
Beg. date ______ Time ______
End date ______ Time ______

ENSES

Transportation fares		______	1
Per diem	______ days @ $	______	
	______ days @ $	______	
	______ days @ $	______	
	______ days @ $	______	
	______ days @ $	______	
Lodging:	______ @ $	______	
	______ @ $	______	
	______ @ $	______	
	______ @ $	______	
	______ @ $	______	
Telephone		______	2
Rental car		______	1
Rental car gasoline		______	1
Private vehicle	______ mi. @ .205	______	2
Local transportation		______	2
Parking		______	2
Registration fee		______	1
Other.			
______		______	2
______		______	2
______		______	2
______		______	2
______		______	2

M are included in lodging or in registration fees.
Ind the number of meals furnished.
B ______ L ______ D ______ ______)

Total expenses ______

SPLIT CODING INFORMATION *(If Appropriate)*

Cost center	______	______	______	______
Program code	______	______	______	______
Amount or	______	______	______	______
Percent	______	______	______	______

DETAILS:

Remuneration received $ ______

1. Staple receipts to this form.
2. Details required.

I hereby certify that, except as otherwise noted, the information submitted in this expense worksheet reflects only expenses incurred by me for official business of the Los Alamos National Laboratory during the dates shown. The worksheet reflects all discounts, reductions, tradeins or offsets whatsoever, which reduced the expenses actually incurred.

SIGNATURE DATE

Telephone Number Mail Stop

Ref. 16.4.

R36-1-321A

LOS ALAMOS NATIONAL LABORATORY TRAVEL SYSTEM
TRAVEL EXPENSE WORKSHEET

TRAVEL GROUP, FIN-8
MAIL STOP P234

	Z number	CC	PRGM	TRIP #		
TOM YEHUDA	036367093	9109	CX21	273277	LOS ALAMOS NEW	09/23/88

ITINERARY

SCHEDULED			ACTUAL	
CITY	DATE	TIME	DATE	TIME

ADVANCES

Cash Advance	202.08
Total Advances	202.08

ye'uda Parton

SIGNATURE DATE

OFFICIAL BUSINESS *(Exclude travel time en route)*

Beg. date ________ Time ________
End date ________ Time ________
Beg. date ________ Time ________
End date ________ Time ________

PENSES

ation fares		________	1
Per diem	________ days @ $	________	
	________ days @ $	________	
	________ days @ $	________	
	________ days @ $	________	
	________ days @ $	________	
Lodging:	________ @ $	________	
	________ @ $	________	
	________ @ $	________	
	________ @ $	________	
	________ @ $	________	
Telephone		________	2
Rental car		________	1
Rental car gasoline		________	1
Private vehicle	________ mi. @ .205	________	2
Local transportation		________	2
Parking		________	2
Registration fee		________	1
Other.			
________		________	2
________		________	2
________		________	2
________		________	2
________		________	2

included in lodging or in registration fees.
ber of meals furnished.

B ________ L ________ D ________ (________)

otal expenses ________

n Number 1127 (3/88)

SPLIT CODING INFORMATION *(If Appropriate)*

Cost center				
Program code				
Amount or				
Percent				

DETAILS:

Remuneration received $ ________

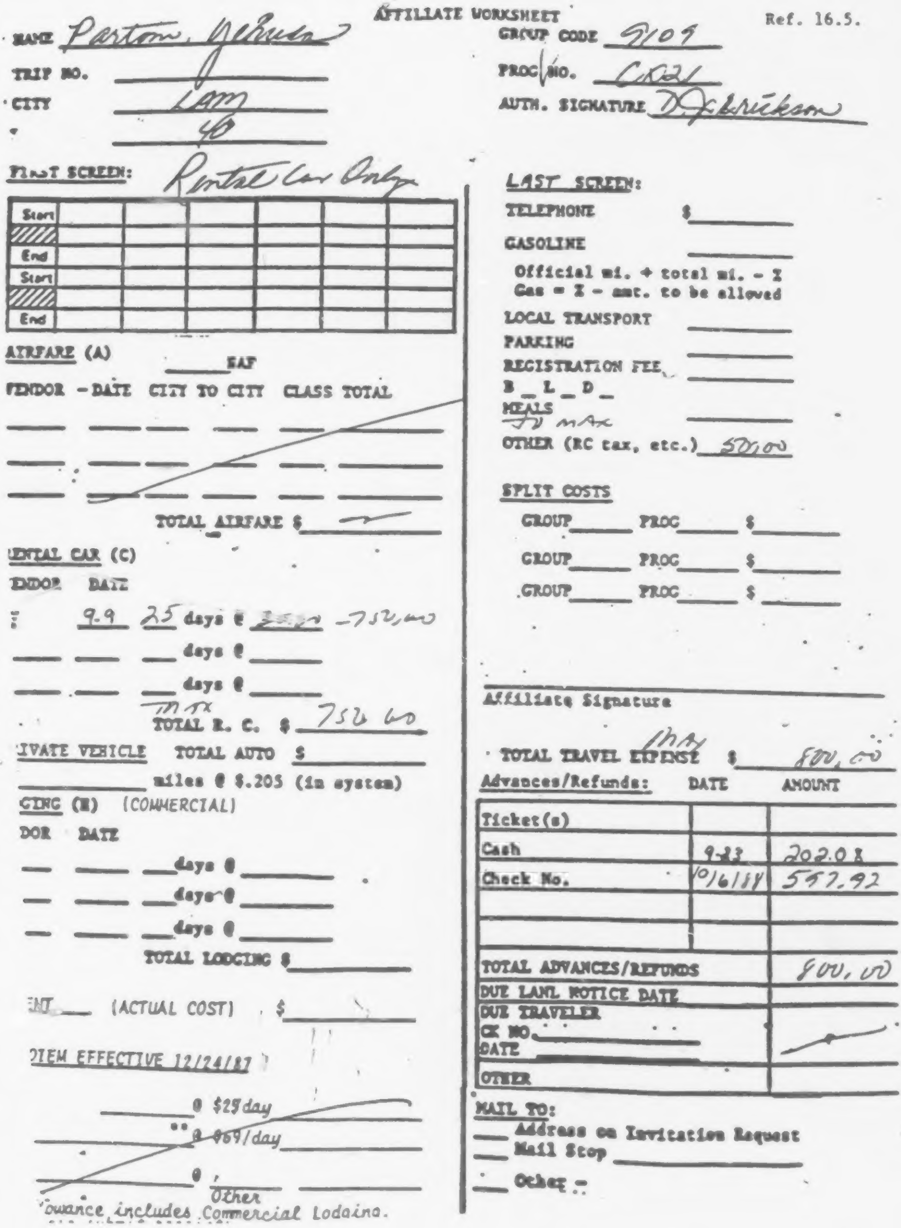
1. Staple receipts to this form.
2. Details required.

I hereby certify that, except as otherwise noted, the information submitted in this expense worksheet reflects only expenses incurred by me for official business of the Los Alamos National Laboratory during the dates shown. The worksheet reflects all discounts, reductions, tradeins or offsets whatsoever, which reduced the expenses actually incurred.

SIGNATURE DATE

Telephone Number

Mail Stop



AFFILIATE WORKSHEET

Ref. 16.5.

NAME Parton, Yehuda
TRIP NO.
CITY LAM
40

GROUP CODE 9109
PROC/NO. CX21
AUTH. SIGNATURE D. J. Erickson

FIRST SCREEN: Rental Car Only

Start						
▨						
End						
Start						
▨						
End						

AIRFARE (A) ______ EAF

VENDOR - DATE CITY TO CITY CLASS TOTAL

TOTAL AIRFARE $ —

ENTAL CAR (C)

ENDOR DATE

9.9 25 days @ [illegible] -752.00

days @

days @

max
TOTAL R. C. $ 752.00

IVATE VEHICLE TOTAL AUTO $

miles @ $.205 (in system)

GING (H) (COMMERCIAL)

DOR DATE

days @

days @

days @

TOTAL LODGING $

ENT (ACTUAL COST) $

DIEM EFFECTIVE 12/24/87

@ $25 day

@ $69/day

@ , Other

owance includes Commercial Lodging.

LAST SCREEN:

TELEPHONE $

GASOLINE

Official mi. ÷ total mi. = %
Gas = % - amt. to be allowed

LOCAL TRANSPORT

PARKING

REGISTRATION FEE

B _ L _ D _

MEALS
30 max

OTHER (RC tax, etc.) 50.00

SPLIT COSTS

GROUP ____ PROC ____ $ ____

GROUP ____ PROC ____ $ ____

GROUP ____ PROC ____ $ ____

Affiliate Signature

max
TOTAL TRAVEL EXPENSE $ 800.00

Advances/Refunds: DATE AMOUNT

	DATE	AMOUNT
Ticket(s)		
Cash	9-23	202.08
Check No.	10/16/88	557.92
TOTAL ADVANCES/REFUNDS		800.00
DUE LANL NOTICE DATE		
DUE TRAVELER CK NO. DATE		—
OTHER		

MAIL TO:
___ Address on Invitation Request
___ Mail Stop ____________
___ Other -

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

AFFILIATE ATTEN NCE REPORT AND CERTIFICATION

Ref. 16.6.

*Indicate work performed at home base with a single asterisk; **work performed on Official Laboratory Travel Status with two asterisks.

me	Group	Cost Center	Program Code
Yehuda PARTOM	M-9	9109	CX21

ENTER HOURS WORKED PER DAY

Week Beginning	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9/19/88		8	8	8	8	8	

Oct. attendance will be forwarded by Poppell 10/11/88

ATTENDANCE APPROVALS

Signature (Group Leader or Division Leader)	Signature (Affiliate) yehuda Partom

SPONSORING ORGANIZATION USE ONLY

Is Affiliate's daily fee to be paid for the above time reported?
☒ Yes ☐ No

Was any of this time worked enroute to/from duty station? *(If so, specify hours and dates.)*
☐ Yes ☒ No

** Is Affiliate's daily fee to be paid while on Official Laboratory Travel Status?
☐ Yes ☒ No

Is a MAXIMUM dollar amount or MAXIMUM days/hours to be paid on this attendance? *(If so, specify.)*
☐ Yes ☒ No

ly fee to be split? *(If so, please indicate below.)*
Yes ☒ No

Dollar amount, percentage or hours	Cost Center	Program Code

MAILING INSTRUCTIONS FOR AFFILIATE'S CHECK

☐ Mail to Affiliate's preferred address
☐ Mail to the following address:
☒ HOLD check; will be picked up
☐ Send to Mail Stop
☐ Notify (Telephone No.)

Form Number 1009 (9/85)

ST-2697

ACT-8
Mail Stop P234

Ref. 17.

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO Ludwig A. Gritzo, M-DO, MS P915

DATE October 3, 1988

FROM Allen J. Tiedman

MAIL STOP/TELEPHONE A120/7-9390

SYMBOL ADS-88-684

SUBJECT DISAPPROVED ALIEN ASSIGNMENT

The Department of Energy has disapproved our assignment request for Yehuda Partom, Israeli, Collaborator, from September 12, 1988 through October 7, 1988.

AJT/BS:mmt

Attachments:
1. Memo, Harold Jaffe, Director, IE-12, to Acting Deputy Assistant Secretary for Security Affairs, DP-30, dtd September 20, 1988
2. Memo, A. B. Siebert, Jr., and E. Q. Ten Eyck, to DP-343.4, dtd September 14, 1988
3. Foreign Visits and Assignments Routing Memo (Partom, Yehuda)

Cy:
H. Valencia, LAAO, w/enc., MS A316
A. Anderson/J. Wackerle, M-9, w/enc., MS P952
R. Vrooman, ISEC, w/enc., MS G729
CAS, w/o enc., MS P237
CRM-4, w/enc., MS A150
OS-12, w/enc., MS B236

Parton

Ref. 18.

date & time

computer requested

computing level (0 = open)

user number

charge code
9109:(M9 reaction [illegible]
(or: [illegible] initiat

```
12-SEP-1988 15:33:45.77  3  35   56  id2 o 803014 9109cx21++ Successful user au
hentication.
20-SEP-1988 10:34:28.56  3  55  236  id2 o 803014 9109cx21++ Successful user au
hentication.
21-SEP-1988 09:15:33.59  4  56  162  idy o 803014 9109cx21++ Successful user au
hentication.
21-SEP-1988 09:16:53.04  4  56  162  id2 o 803014 9109cx21++ Successful user au
hentication.
21-SEP-1988 13:49:59.63  3  55  221  id2 o 803014 9109cx21++ Successful user au
hentication.

29-SEP-1988 10:51:45.84  1  52   25  idx o 803014 9109cx91++ Successful user au
hentication.
29-SEP-1988 10:53:46.65  1  42   56  idx o 803014 9109cx21++ Successful user au
hentication.
29-SEP-1988 11:15:17.16  1  52   27  idx o 803014 9109cx21++ Successful user au
hentication.
29-SEP-1988 13:28:16.47  1  52   25  idx o 803014 9109cx21++ Successful user au
hentication.
```

- Machines 2, y, x are all CRAYs in the Open Partition

Parton has now been blacklisted & cannot be reinstated without my permission (or Charlene Douglass, OS-4).

Jim McClary
@ 7 Oct 1988
1130

Q.5: CLASSIFIED ~

UNCLASSIFIED

QUESTION 6: PLEASE PROVIDE A LIST OF ALL COUNTRIES WHOSE NATIONALS HAVE WORKED ON CLASSIFIED PROJECTS AT THE 3 LABORATORIES WITHIN THE LAST TEN YEARS. PLEASE IDENTIFY THE SPECIFIC PROJECTS.

Response: Assignment of foreign nationals at the DOE laboratories for the purpose of classified work has been limited. These assignments are permitted under the auspices of mutual defense agreements between the United States and allied nations as described in the response to Question 5. These classified assignments are not covered under the DOE unclassified Foreign Visits and Assignments program.

QUESTION 7. BOTH DOE AND GAO HAVE TESTIFIED THAT UNCLASSIFIED INFORMATION FROM THESE LABS HAS LIKELY BEEN TRANSFERRED WITHOUT AUTHORIZATION TO INDIVIDUALS FROM FOREIGN NUCLEAR WEAPONS FACILITIES OR FROM FOREIGN INTELLIGENCE SERVICES. PLEASE EVALUATE THE IMPACT THAT THIS INFORMATION HAS HAD, OR IS LIKELY TO HAVE IN THE FUTURE, ON FOREIGN NUCLEAR WEAPONS PROGRAMS. PLEASE INCLUDE IN THIS EVALUATION THE EFFECTS UPON U.S. NATIONAL SECURITY AND U.S. NUCLEAR NON-PROLIFERATION GOALS.

RESPONSE: DOE, as part of its technology transfer and commercialization program, has systematically worked to insure that unclassified information from it laboratories is, in fact, made available to the private sector. Historically, the Department has not tracked, controlled, or otherwise attempted to oversee the dissemination of such unclassified scientific and technical information to the private, commercial sector. At present, we have limited mechanisms to distinguish between the request for such information by a private U.S. corporation or a foreign national of a sensitive country. Defense Programs has developed a set of "guidelines" to ensure that such information has been reviewed and certified prior to release as non-sensitive and unclassified. Whether any such information can be, or has been, of value to other countries' nuclear weapons programs is conjecture, but the Department is attempting to take measures to minimize the potential for such transfers.

Growth of Number of Foreign Visitors to Los Alamos from Countries of Proliferation Concern

Country	April 1977-May 1979	Jan 1986-Sept. 1987
Argentina	1	14 (plus 2 at LLNL 2 at Sandia)
Brazil	3	19 (plus 13 at LLNL)
Egypt	5	5 (plus 10 at LLNL 2 at Sandia)
India	13	56 (plus 84 at LLNL 9 at Sandia)
Iran	3	5 (plus 18 at LLNL 2 at Sandia)
Iraq	0	2
Israel	0	60 (plus 75 at LLNL 53 at Sandia)
Pakistan	0	4 (plus 7 at LLNL)
South Africa	1	7 (plus 9 at LLNL 1 at Sandia)
South Korea	3	19 (plus 40 at LLNL 1 at Sandia)
Taiwan	3	14 (plus 26 at LLNL 11 at Sandia)

[Note: LLNL = Lawrence Livermore National Laboratory
Sandia = Sandia National Laboratories]

Department of Energy
Washington, DC 20585

Honorable John Glenn
Chairman
Committee on Governmental Affairs
United States Senate
Washington, DC 20510

Dear Senator Glenn:

During the hearing before the Senate Committee on Governmental Affairs concerning the General Accounting Office (GAO) report about "Security Weaknesses at the Nuclear Weapons Laboratories" on Tuesday, October 11, 1988, you asked if I could provide assurances that all foreign nationals currently going to the weapons laboratories had security plans and completed indices checks (background checks). I indicated I would furnish a response for the record.

We have reviewed this matter with officials of the Albuquerque Operations Office, which administers Sandia National Laboratory (SNLA) in Albuquerque and Los Alamos National Laboratory (LANL), and the San Francisco Operations Office which administers Lawrence Livermore National Laboratory (LLNL). These officials are responsible for ensuring the security of these facilities.

To insure that the procedures relating to security plans and indices checks are adequate, and pending the issuance of a new DOE Order on visits and assignments which will address the concerns expressed by the GAO, the Assistant Secretary for Defense Programs has issued interim guidance to the DOE Weapons Complex. Under this interim guidance, foreign nationals from sensitive countries will not be allowed access to any DOE security facility. The interim guidance also requires that indices checks be completed before a visit or assignment with a foreign national to a weapons complex facility (not involving any security facility contained therein) is approved, and that a tailored security plan be approved before the start of such a visit or assignment. A copy of the interim guidance is enclosed.

We expect to publish the new DOE Order on visits and assignments before the end of October, and we are currently working with the Intelligence Community to speed up the process of completing the indices checks. We will keep you apprised of our progress.

If you or your staff have any questions concerning the visits and assignments program and our efforts to strengthen the program, you may telephone me at 586-2181.

Sincerely,

Richard A. Du Val

Richard A. Du Val
Acting Deputy Assistant Secretary
for Operations
Defense Programs

Enclosure

DOE F 1325.8
(12-84)

United States Government **Department of Energy**

memorandum

DATE: [illegible] 2 1988

REPLY TO ATTN OF: DP-323

SUBJECT: Department of Energy (DOE) Order 1240.2, "Unclassified Visits and Assignments by Foreign Nationals"--Interim Policy Guidance

TO: Manager, Oak Ridge Operations Office
Manager, Savannah River Operations Office
Manager, Nevada Operations Office
Manager, Idaho Operations Officer
Manager, Albuquerque Operations Office
Manager, Richland Operations Office
Manager, San Francisco Operations Office
Manager, Chicago Operations Office

Pending the issuance of a revised DOE order on unclassified foreign national visits and assignments, the following interim policy guidance is to go into effect immediately for all areas within nuclear weapons complex facilities (see attachment 1).

1. A foreign national of a sensitive country will not be allowed access to a security facility. A security facility is any DOE facility which has been approved by DOE for generating, receiving, using, processing, storing, reproducing, transmitting, destroying, or handling special nuclear materials or classified matter. Such a facility is a specific physically bounded area which has been individually certified by the cognizant security officer in accordance with DOE 56321.1A, "Protection Program Operations."

2. Indices checks must be completed before approval of, and a tailored security plan (see attachment 2) approved by the cognizant Field Elements before the start of, a visit or assignment to a weapon complex facility involving:

   a. A foreign national of a sensitive country (see attachment 3).

   b. A sensitive subject, as defined in DOE 1240.2.

   c. A foreign national of a non-sensitive country to a security facility.

   Information copies of these security plans will be provided to DP-1.

3. Host reports will be completed and submitted to the cognizant DOE Field Element within fifteen (15) working days following any visit or assignment identified in paragraph 2 above. Information copies of all reports will be provided to DP-1

4. Field Elements are to ensure compliance with delegations of authority specified in paragraph 7d(12) and time-frame requirements specified in paragraph 8e of DOE 1240.2.

5. Written requests for exceptions on a case-by-case basis to the above requirements must be approved by DP-1.

Headquarters is working with the Intelligence Community to speed up the processing of indices checks requests, reducing response times. Questions concerning this interim guidance should be directed to Dr. Charles Gilbert, DP-30, at FTS 896-6591.

Troy E. Wade II
Acting Assistant Secretary
Defense Programs

Attachment 1

DOE WEAPONS COMPLEX FACILITIES

Albuquerque Operations Office

Los Alamos National Laboratory
Sandia National Laboratory-Albuquerque
Rocky Flats Plant
Pinellas Plant
Mound Facility
Pantex Plant
Kansas City Plant

San Francisco Operations Office

Lawrence Livermore National Laboratory
Sandia National Laboratory-Livermore

Chicago Operations Office

New Brunswick Laboratory

Idaho Operations Office

Idaho National Engineering Laboratory
Idaho Chemical Processing Plant

Nevada Operations Office

Nevada Test Site

Oak Ridge Operations Office

RMI, Ashtabula
Fernald Feed Materials Plant
Y-12 Plant

Richland Operations Office

Plutonium Uranium Extraction (PUREX)
Plutonium Finishing Plant
N Reactor

Savannah River Operations Office

Savannah River Laboratory
Savannah River Plant
Savannah River Weapons Facility

Attachment 2

SECURITY PLAN

The basic criterion which a security plan must meet is that its implementation will prevent the compromise of a DOE security interest or sensitive subject to a foreign visitor or assignee. Security plans not meeting this criterion will not be approved.

Security plans will include the following elements:

- o Names and citizenship of foreign nationals covered by the plan. Name and location of employer.
- o Scope of the visit or assignment.
    - Purpose
    - Duration
    - Specify whether covered by agreement, and if so, which one
    - Facilities and subject(s)
    - Type of security facility
- o Names of escort(s)
- o Designation of individual(s) responsible for implementation of plans and for assuring that DOE security interests and sensitive subjects are not compromised.
- o Operational plan (the specifics of the physical security activities required to ensure a DOE security interest is not compromised). The specific level of detail is dependent on the variables involved with the visit or assignment. Examples of elements that should be included follow:
    - Initial verification of attendees
    - Distinctive badging
    - Transportation at site including mode and routes
    - Role of escorts
    - Role of security inspectors
    - Designation of specific buildings/facilities to be utilized and specific protective methods to be employed
    - Briefing of hosts/escorts on their responsibilities
    - Any need to suspend classified activities
    - Briefing of visitors regarding rules of conduct including a discussion of prohibited items such as cameras and weapons (Visitors and assignees should be advised before entering the facility as to what is prohibited.)
    - Access to site outside normal business hours
    - Consideration of critical/sensitive Information Lists
    - Posting of signs indicating uncleared foreign nationals are in the area

- o Briefing of all personnel who will be involved with the visitor or assignee to assure that:
  - classification instructions relating to the matters to be discussed are clearly understood
  - Visitors or assignees do not receive access that would compromise security interests or sensitive subjects
  - the subject matter for the visit or assignment, and any limitations thereon, are understood by participants
  - the security regulations applicable to the visit or assignment, as well as any special precautions, are followed
  - any exchange of documents is made in accordance with applicable regulations
  - participants understand their responsibilities for reporting hostile contacts under DOE Order 5631.1A Security Education, and are advised to report such contacts immediately
  - Any subsequent communications from or contacts by the visitor are reported to the facility security officer
  - obtain views of appropriate operational security committee.

Attachment 3

SENITIVE COUNTRIES

Countries appear on these lists for various reasons related to DOE internal policies and procedures, without necessarily reflecting policies of any other elements of the United States Government.

1. COMMUNIST-CONTROLLED COUNTRIES.

Afganistan
Albania
Bulgaria
Cambodia (Kampuchea)
China (People's Republic)
Cuba
Czechoslovakia
Germany, East (Democratic Republic)
Hungary
Korea, North (Democratic People's Republic)
Laos
Mongolia
Poland
Romania
Soviet Union
Yeman (Aden)
Vietnam
Yugoslavia

2. OTHER SENSITIVE COUNTRIES.

Algeria
Andorra
Angola
Antigua-Barbuda
Argentina
Bahrain
Belize
Benin, Peoples Republic of
Brazil
Burma
Chad
Chile
Comoro Islands
Congo
Djibouti
Egypt
El Salvador
Ethiopia
Grenada
Guyana
India
Iran
Iraq
Israel
Kiribati
Korea, South (Republic of)
Kuwait
Lebanon
Libya
Malawi
Mauritania
Mozambique
Namibia
Nicaragua
Niger
Nigeria
Oman
Pakistan
Qatar
Saudi Arabia
Soloman Islands
South Africa
Syria
Taiwan
Tanzania
United Arab Emiratess
Vanautu
Yeman Arab Pepublic (Senaa)
Zambia
Zimbabwe

U.S. DEPARTMENT OF ENERGY

"THE INNOCENT ABROAD"

15-minute Informational Film/Video
on Security Measures to be Practiced
by Scientific Personnel Traveling Abroad

Produced By:

ARGONNE NATIONAL LABORATORY
Film & Video Group
Al Rucker - Director
312-972-5349

Written By:

James M. Lamont
312-948-8355

1st Draft Script - October 17, 1986
Revised - December 8, 1986

PRODUCTION NOTE: The following film/video contains scenes which are set in foreign locales. Budgetary considerations precluse travel to foreign locations for total authenticity. In their place, "stylizing" of American locales (esp. in Chicago and Washington) is recommended. Additionally, small sets can be constructed at Argonne video facilities.

-0-

PRINCIPAL CAST (speaking parts, in order of appearance)

TOM: Scientist, mid-30s. Good-looking, natty, bright--but naive
MARY: Tom's secretary
NANCY: Tom's wife. Same age, also attractive
CUSTOMS OFFICER: Foreign, swarthy, dour
STAN: Foreign national. Mid-40s. Lean, attractive, good dresser
JOHN: Lab Security Officer. About 50. Serious, curt
Mr. SAMSON: FBI agent. About 40. Serious, businesslike
NARRATOR: Male, attractive

OTHERS in CAST:

BARTENDER...WOMAN in BAR...4-6 EXTRAS for BAR scene.

FADE IN

1. STOCK

DOE LOGO — MUSIC (MX): DANK, MYSTERIOUS

SUPER HEAD TITLES:

THE
UNITED STATES
DEPARTMENT OF ENERGY
PRESENTS

FADE OUT/FADE IN

THE INNOCENT ABROAD — MX: FADE OUT

FADE OUT

2. INT TOM'S OFFICE DAY

A typical SCIENTIST'S OFFICE: cluttered with scientific paraphenalia, books and papers everywhere.

To one side is a 17" computer with printer and printout alongside. On a table or shelf against a wall are bottles of chemicals, glassware and other chemical accrotrements. On a side table are a calculator, vacuum bottle, dewar flask, journals and other periodicals. On the wall is a calendar filled in with projects and schedules and a periodic table of the elements.

As the scene opens, TOM is at his desk, looking dreamingly at a foreign travel brochure. Other, similar materials are before him.

TOM looks up. — SFX: KNOCK AT DOOR

TOM:

Come in!

	MARY ENTERS, holding an envelope which she emphasizes.	MARY: Here're your tickets. Travel just sent them over.
	TOM reaches for tickets anxiously.	TOM: Ah, good. Thank you.
	TOM nearly drops the envelope as he anxiously opens it, takes out and fumbles with tickets.	
3.	MCU, MARY, smiling indulgently.	MARY: First trip to Eastern Europe?
4.	TOM relaxes a bit, smiles back self-consciously.	TOM: More than that. My first trip to Europe--period. So I'm, well, a little anxious.
	PAN with TOM as he stands, steps over to another side table (not seen previously) upon which are a stuffed manila envelope wrapped in rubber bands; a neat, black 3-ring binder, and a compuer tape. TOM indiates this assembly.	But I'm ready.
	TOM picks up binder.	Got my paper, all set to deliver at the conference.
	TOM puts down binder, picks up computer tape.	And here's the computer model.
	TOM puts down tape, picks up bound manila folder.	And these are the measurements from

last week's experiments. I'll work on them if I have time.

MARY steps up to array, looks at it thoughtfully.

MARY:

Well, be careful. There're less than friendly people over there, you know.

TOM:

Oh, it's all right. The paper has been cleared. Nothing here is classified.

5. MCU, MARY, looking concerned.

MARY:

I know. Still, there's your other work.

MARY indicates folder.

There's a lot of unpublished, cutting-edge information here, you know.

6. MCU, TOM, also looking down thoughtfully.

TOM:

I'll be fine.

TOM looks up, as to MARY.

It'll be all right. I'll not let is out of my sight.

7. TWO-SHOT, MARY and TOM as she reaches out, grasps his arm in a reassuring manner.

MARY:

I know. I hope so. Take your camera. Take some time and enjoy yourself.

	TOM: I plan to.
TOM and MARY look down at the papers/computer tape. PAN and ZOOM IN to items. MATCH DISSOLVE:	
8. INT TOM'S HOUSE DAY	
In TOM and NANCY's BEDROOM: ZOOM OUT from papers to reveal MARY helping TOM pack for his trip. She is folding shirts, packing his suitcase on one side of their king-size bed as he is methodically packing his briefcase on the other.	NANCY: There's plenty of room in your suitcase. Want me to put in an extra sweater?
TOM stops trying to stuff his briefcase, collapses on the edge of the bed.	TOM: No. I'll need the space.
He gestures to briefcase, which is stuffed.	There's just no room in here for the tape. We'll pack it in the suitcase.
9. MCU, NANCY, looking concerned.	NANCY: Are you sure? The suitcase is going to be checked at the airline.
10. TWO-SHOT, TOM and NANCY.	TOM: Let me think.

	TOM looks thoughtful, then brightens.	I know. I won't check it through all the way. I'll pick it up in London, then carry it to the next counter.
		NANCY: I still don't know. Those stories about bags being searched and all.
11.	MCU, TOM, smiling reassuringly.	TOM: It'll be all right.
	PAN DOWN to TOM's HAND as he reaches out to clasp NANCY's HAND. As their hands touch, PAN to the computer tape box as TOM's other HAND gently shoves it toward the suitcase.	SFX: DOOR BELL
		NANCY (over): There's the limo.
	DISSOLVE:	
12.	STOCK	
	NIGHTTIME VIEW: Large (747) AIRLINER taking off from major airport. PAN with AIRLINER as it lifts off.	SFX: AIRPORT PRESENCE/AIRLINER TAKING OFF
	DISSOLVE:	
13.	INT AIRPORT CUSTOMS DAY	
	TOM is standing before a counter. Spread out before him are his briefcase and suitcase, both open for inspection.	

A CUSTOMS OFFICER is seated behind the counter, a dour look on his face as he unsmilingly examines TOM's passport and visa.

CUSTOMS OFFICER (thickly accented):

Is this your first visit to our country, Mr. Noble?

TOM (anxiously):

Doctor Noble. Yes, it is.

CUSTOMS OFFICER

And you are here for the Solid State Conference?

TOM:

That's right. I'll only be here three days.

CUSTOMS OFFICIAL hands passport to TOM.

CUSTOMS OFFICIAL:

Have a nice visit, Doctor Noble.

TOM takes his passport, looks nervous.

TOM:

Uh, thank you.

TOM gestures hesitantly at his visa.

My visa?

CUSTOMS OFFICIAL looks down at visa, shrugs, takes one copy and hands it to TOM, leaving other copy on desk.

CUSTOMS OFFICIAL:

We hold one copy until your departure.

TOM:

Uh, okay.

TOM hurriedly closes his briefcase and suitcase, picks them up and steps quickly away from the counter.

ZOOM IN to CUSTOMS OFFICIAL who watches TOM depart, then turns and looks off-camera.

14. MCU, VISA as a GLOVED HAND reaches into frame, withdraws VISA.

DISSOLVE:

15. INT HOTEL ROOM EVENING

An Eastern European hotel room: Furnishings are sparse and old, perhaps Victorian, but the room is neat and clean.

TOM is seated on the edge of the bed, talking on the phone, which is old and dialless. His suitcase is open and on the bed beside him; his briefcase is on a spare desk alongside.

TOM (loudly):

What's that honey? (pause) Oh, yes, it's fine, really. (pause) Well, we have a tour tomorrow. (pause) Oh, yes. We always travel in groups, although I guess we don't have to. (pause) What's that? Oh, yes, I know. Don't worry; I'll be careful. It's very nice here, really. Everyone's very friendly.

TOM shifts position on the bed as he glances at his wristwatch.

Listen! My internal clock's still getting adjusted, so I think I'll go downstairs and get something to eat. (pause) (chuckle) Oh, yes, I know. Only bottled water. Or beer or wine. Don't worry, honey; I'm fine. (pause) Love you, too. Speak to you tomorrow. Kiss the kids for me. 'Bye.

TOM hangs up the phone, looks longingly at it, then shrugs and stretches. Still stretching, he stands and adjusts his tie.

PAN with TOM as he steps over to where his suit jacket is hanging on the back of a chair, dons his jacket, checks the pocket, then steps to exit the room.

16. LOW-ANGLE, MCU, MANILA FOLDER, unopened, on table. TOM at door in background. TOM takes a final look around room, then opens door and EXITS.

17. HOTEL BAR NIGHT

A dark, sparsely-lighted bar, with a vague Eastern European or German atmosphere.

TOM is seated at a table, reading a guidebook. A bottle of beer and a glass are before him.

	In the background, STAN ENTERS, looks quickly around, then steps up to the BARTENDER. STAN is neatly-dressed in a suit.	
18.	REVERSE ANGLE, as BARTENDER points out TOM. STAN nods, then steps over to TOM's table.	
19.	MS, TWO-SHOT, as STAN steps up to TOM.	STAN (slightly accented): Dr. Noble? Dr. Thomas Noble?
	TOM, who has been staring off dreamily while reading and sipping his beer, straightens to greet STAN.	TOM: Uh, yes, that's correct. May I help you?
	STAN extends his hand. TOM takes it hesitantly.	STAN: Permit me, please, to introduce myself. Dr. Stannus Mareck. Stan! I am theoretical physicist like yourself. I also attend conference tomorrow. I have followed your published work. I recognize you from picture in program.
	STAN gestures to vacant chair at table.	May I join you, please?
	TOM hesitates, looks hesitantly at STAN, then gestures to chair.	TOM: Uh, sure. Please do.

20. MCU, STAN, as he seats himself, addresses TOM.

STAN:

Please excuse intrusion. But you seem alone. And I know you are only American on program. And I thought I may be of service.

21. REVERSE, of TOM, still somewhat hesitant.

TOM:

Well, thank you. But I'm doing fine, really. I was just thinking of ordering dinner.

22. MEDIUM TWO-SHOT, TOM and STAN at table, STAN leaning forward.

STAN:

Oh, permit me, please. This is my homeland. And I am very honored to share table with distinguished physicist like yourself.

TOM:

Your homeland? Here!

23. MCU, STAN, smiling and making wave-off gesture.

STAN:

Oh, not to worry. I live in West now. They let me come back. They consider me...useful.

24. MCU, TOM, as he looks relieved, leans forward.

TOM:

		Oh, well...Well, I'm very pleased to meet you Dr. Mareck.
	TOM holds up guidebook.	I was just looking through the--your--guidebook. I have some free time tomorrow between meetings, and I was thinking of sight-seeing.
25.	MLS, TOM and STAN at table, as seen from across BARTENDER, now leaning toward each other and talking animately.	MX: IN, MYSTERIOUS THEME
26.	REVERSE, MCU, BARTENDER as he looks off as if at TOM and STAN, a dour expression on his face as he casually wipes glasses.	
27.	TWO-SHOT, TOM and STAN. Their chairs are now closer and both are peering at TOM's GUIDEBOOK. STAN smiles excitedly and points at PAGE in GUIDEBOOK.	MX: FADE OUT STAN: Oh, yes. Yes! You must see that. And in the late afternoon when the light strikes it just so.
	To TOM, gesturing.	You brought camera, no? Go there then. Great picture!
28.	MCU, TOM, as he leans back, pats stomach, sighs.	TOM: Well, that certainly will fill up tomorrow. But for now, I'm really hungry. I think I'll order dinner, then turn in.

29.	REVERSE, MCU, STAN, as he smiles, makes wave-off gesture.	STAN: Oh, Dr. Noble. Tom! Please permit me. This is my city. Permit me to take you to excellent restaurant. Not state-controlled. For Party members. Excellent food.
30.	TWO-SHOT, TOM and STAN, TOM looking hesitant once again.	TOM: Well...I don't know.
	STAN leans forward, grasps TOM's wrist.	STAN: Please! Would be great honor.
	STAN gestures broadly.	And they feed you so much, you will need--how you say?--"doggy bag!"
	TOM laughs, leans forward again.	TOM: Well, it certainly sounds like a treat.
	STAN springs to his feet, pulling-gesturing TOM up with him.	STAN: It settled then. And not to worry. I get you back in plenty time to get much sleep.
31.	MLS, from back of BARROOM, as STAN and TOM EXIT. As they leave, an attractive young WOMAN who has been sitting alone at a nearby table nursing a drink, gath-	MX: IN, MYSTERIOUS THEME

	ers her purse, also stands and EXITS behind them.	
	ZOOM IN to MCU, BARTENDER, still dourly polishing glassware.	MX: SEGUE TO...
	DISSOLVE:	
32.	STUDIO	
	LOW-ANGLE MS, TOM, at lectern, speaking from text as if delivering lecture. A VuGraph projector is beside him, light from screen reflecting on his face as he speaks.	MX: BRIGHT THEME, FOREIGN FLAVOR
	DISSOLVE:	
33.	EXT CITY STREET DAY	
	MCU, LOW-ANGLE (so as not to reveal true locale), TOM as he snaps picture, lowers camera, smiles.	
	DISSOLVE:	
34.	INT or EXT TRINKET SHOP	
	MS, TOM, window-shopping or inside store, buying souvenir.	MX: SEGUE TO...
	DISSOLVE:	
35.	STOCK - EXT AIRPORT DAY	
	MLS, 747 AIRLINER LANDING. (Reverse angle from scene of airliner taking off.)	SFX: AIRLINER LANDING
	DISSOLVE:	

36. INT TOM'S OFFICE DAY

TOM is seated at work before computer terminal. He looks up as MARY ENTERS.

TOM:

What is it, Mary?

37. MCU, MARY, looking concerned.

MARY:

Tom! The director wants to see you in his office right away.

38. TWO-SHOT, TOM and MARY.

TOM:

What's it about?

MARY:

I don't know. But Kathy sounded serious.

TOM looks concerned, then shrugs, stands, dons suit jacket and EXITS with MARY following.

39. INT DIRECTOR's OFFICE DAY

JOHN, Lab Security Dir., is seated behind his desk, a very serious expression on his face, as TOM ENTERS.

To one side is Mr. SAMSON, an FBI agent. Both RISE as TOM ENTERS.

TOM:

What is it, John?

JOHN INDICATES SAMSON.

JOHN:

Tom, this is Mr. Samson.

	TOM reaches for SAMSON's hand, smiling a greeting.	TOM: Please to meet you, Mr. Samson.
		JOHN: Tom. Mr. Samson's with the F-B-I. He can't tell us everything, but he's involved in foreign intelligence activities.
	TOM halts his handshake in mid-shake, withdraws his hand slowly.	TOM: I see.
	TOM turns to JOHN.	What can I do for you, Mr. Samson?
	JOHN picks up a bound sheaf of papers off his desk, hands it to TOM.	JOHN: This is for you.
	JOHN turns from TOM, stares out his office window.	The summary's on top.
40.	REVERSE, MS, TOM, as he starts to read summary.	
	SAMSON joins TOM in frame, motions him to chair.	SAMSON: You had better sit down, Dr. Noble.
41.	MCU, TOM, as he sits, reads. His mouth falls open as he scans, flips pages.	TOM: Good grief! This can't be!

42.	MCU, JOHN, as he turns from window, stares at TOM.	JOHN: I'm afraid it is, Tom.
43.	TOM stops reading, looks up.	TOM: But this is my work! How did you get it?
44.	MCU, SAMSON.	SAMSON: That's what we're here to find out, doctor.
	ZOOM OUT SLIGHTLY as JOHN steps alongside SAMSON.	JOHN: We're sure it was gotten from you somehow when you were at that conference last year.
45.	MS, as TOM springs to his feet, steps to join JOHN and SAMSON.	TOM: But that can't be!
	TOM stabs at report.	This is the whole theory. All I took was some raw data--and that was just from initial experiments.
	TOM turns accusingly to JOHN.	It's unclassified!
	JOHN looks momentarily embarrassed, steps forward to comfort TOM.	JOHN: We know that, Tom. But it seems your preliminary data was all they needed to confirm their own measurements.

Then they put it together. That's whaat you're reading.

46. MCU, SAMSON.

SAMSON:

Intelligence-gathering works that way, doctor. A little here, a little there. And in time, they put the puzzle together.

47. MS, the three men.

The way we figure it, they got hold of your papers somehow and copied them.

JOHN:

That's why we're here, Tom. To reconstruct what you did over there. To determine where you may have let down your guard.

TOM turns from the other two and slumps back in the chair, looks idly at the report, then at the other two who stand by expectantly.

TOM:

I don't know. I'll have to think.

JOHN steps forward to TOM.

JOHN:

Take your time, Tom. And remember... you're not the first this has happened to.

48.	MCU, JOHN, looking down as if at TOM.	Let's talk. We need to know how this happened.
49.	MLS, into DIRECTOR's OFFICE from outer HALLWAY as TOM speaks, gestures to the other two men.	
	DOLLY-ZOOM BACK SLIGHTLY to take in NARRATOR, standing just outside doorway, looking in.	
	NARRATOR is neatly-attired in suit, plus outer trench coat. He looks in at the scene in the office, then to camera.	NARRATOR: A fictional story? Yes! But based on true events--a series of mistakes which led to a loss of technology--a breach of technological security.
	ZOOM IN to MCU, NARRATOR.	And in it, a lesson--a lesson on measures *you* should take to protect yourself *and* your work when traveling abroad--and especially behind the Iron Curtain--on official business.
50.	MS, DIFFERENT ANGLE, NARRATOR as he starts to walk slowly from office.	Tom there? He was set up from the first. As *you* might be if you have an established scientific reputation, and so are of interest to the foreign intelligence community.

51.	MCU, NARRATOR.	Let's look at what happened--and what Tom might have done to prevent the loss.
	DISSOLVE:	MX: FADE IN FOREIGN THEME
52.	REPEAT SCENE: TOM and NANCY packing for the trip.	NARRATOR - VOICE OVER (VO): First, Tom should have hand-carried the computer tape along with his other papers. That lessens risk of loss en route, of course. More importantly, it keeps sensitive materials--including raw data--in your possession at all times.
	DISSOLVE:	
53.	REPEAT SCENE: TOM and CUSTOMS OFFICER, with visa.	Tom should have realized that all interested parties would be aware of his trip. He was scheduled to come, of course. His visa was proof of his arrival.
	DISSOLVE:	
54.	REPEAT SCENE: TOM on phone in HOTEL ROOM.	Especially in a Communist-controlled country, assume that your hotel room and telephone are bugged. If you recall, Tom told his wife--and thus any listeners--that he was leaving.

55.	REPEAT SCENE: TOM EXITING ROOM, PACKAGE evident. DISSOLVE:	And here's a real kicker: Tom should never have left the room without that package of notes.
56.	REPEAT SCENE: TOM and STAN chatting, drinking at table.	Stan? Of course, he was an agent. It was his job to keep Tom occupied while the package was lifted and copied.
57.	REPEAT SCENE: MCU, STAN.	They don't wear slouch hats and il-fitting suits anymore. They're friendly, innocuous, just like you and me. And if Stan had failed...
58.	MS, WOMAN at TABLE in BAR.	...she was the backup. Yes, it's true. Sexual favors--and sexual blackmail--are as much a part of spy fact as spy fiction. Just read what's happened to the British and West Germans.
59.	MLS, WOMAN at TABLE as seen across TOM and STAN as they chat.	If Tom had been single, or been pegged as being a philanderer, she might have moved in first.
60.	REPEAT SCENE: BARTENDER wiping glasses.	The bartender? He wasn't an agent. But life in those countries isn't free. People do as they are told. The point is you shouldn't trust anyone you meet

		casually. Not bartenders, clerks, taxi drivers, hotel conciereges, tour guides, waiters, maids...anybody!
62.	REPEAT SCENE: TOM taking picture.	And finally, Tom should not have gone off on his own. Stick to groups. You're important--especially to them.
63.	REPEAT SCENE: TOM shopping.	Kidnapping is rare--but it does happen. You don't have any idea--really!--how important you may be. So assume you're a big prize, and stick with your group.
64.	INT LABORATORY In HALLWAY outside DIRECTOR's OFFICE, NARRATOR addressing camera.	NARRATOR: There are other steps you can take to protect yourself and your work when traveling abroad--especially in Communist-controlled countries.
	NARRATOR ticks off points on fingers.	First, watch what you say. An offhand remark could be used for propaganda. If you're going to be discussing possible cooperation or exchanges, make sure you have the authority to do

		so. And be sure not to make promises you can't keep.
65.	STUDIO MCU, blank PETITION FORM on which is seen a small, innocuous-looking BLACK BOX.	NARRATOR - VO: Don't sign any petition or accept anything for transport out of the country. It could be a set-up--in fact, it probably is--and you could be arrested.
	PAN to MCU, bottle of Scotch and/or box of Cuban cigars.	The same goes for accepting black market items.
	PAN to MCU, CAMERA.	And don't take any unauthorized pictures.
66.	MCU, NARRATOR.	NARRATOR: In all, think of yourself as a guest at the snootiest event you can imagine. Conduct yourself perfectly--and everything should be fine.
67.	MS, NARRATOR as he once more walks down hall.	Now, here's a couple of points about items you may be carrying.
68.	INT TOM's OFFICE DAY MCU, COMPUTER TAPE.	NARRATOR - VO: If you're carrying equipment such as

	computer tapes or instruments, get approval beforehand for their entry. Such approval may be in the form of an export license. Having approval on hand will avoid embarrassing delays at airport customs.
69. MCU, FS, TOM's PAPER, as seen in 3-ring BINDER.	The same goes for papers you may be presenting. Submit them for approvals well in advance of your trip.
70. STOCK - EXT DAY ESTAB, U.S. EMBASSY in European country.	NARRATOR - VO: Once in the foreign country, consider our embassy your sanctuary--your home away from home. Upon arrival, it's a good idea to register there.
71. INT EMBASSY-LIKE BUILDING MLS, into office, of two men talking, one seated behind desk.	If you're contacted, or you think you're being set up, go to our embassy or consulate and report it. Or wait until you get home and contact the F-B-I or other security.
72. STOCK or LIVE MLS, large party or reception, persons standing about	

	and chatting.	In fact, it's a good idea to question the motives of anyone who questions you about sensitive or security matters. Just because someone's from a friendly country doesn't necessarily mean they're friendly. They may be after your work.
73.	REPEAT SCENE: TOM in DIRECTOR's OFFICE, being questioned by JOHN and SAMSON.	Just remember the lesson of Tom. His story was fiction, but it was based on fact--just as are your record and your professional reputation.
74.	MCU, NARRATOR.	NARRATOR: Ask about security procedures. They're written down. Study them! Do as they say, and don't worry.
75.	MS, NARRATOR, in HALLWAY. NARRATOR turns back to camera, begins walking slowly away. SUPER END TITLES/CREDITS:	It'll be all right. MX: IN FOREIGN THEME, UP AND HOLD TO END

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Secrets and Security

For Your Information

September 3, 1987

For Your Information
August 13, 1986 Page 1
1. INT or EXT suburban shopping mall - day

A medium shot of an innocuous book store, shoppers passing in-and-out the camera's presence being one of a casual onlooker, from a surreptious location across the way.

Sound effects (SFX): Presence

Suddenly a very non-casual character enters the scene: a man walking hurriedly, hunched over, wearing a big trench coat, hands in pockets, fedora over eyes. He pauses momentarily at the bookstore entrance glances quickly left and right then hurries inside.

Moments later a similarly attired woman a classic femme fatale, follows, goes through the same suspicious glancing routine, then also enters

2. INT - bookstore - Still glancing suspiciously about, yet in an obvious stage manner, the man approaches a book shelf, removes a book, then reaches inside his coat and extracts an envelope.

3. INSET - close shot as envelope is placed inside open book, then returned to shelf

4. INT - book store -after replacing the book, the man glances suspiciously around again, then hurries away.

5. Inset - Close shot -envelope being taken from book

6. Int - book store, the woman glances nervously about as she shoves envelope inside her coat, replaces book,

Narrator: Voiceover (VO)
In much spy fiction, this is the way it is.

In the manner of the man,

the woman now hurries from the bookstore. The camera looks after her, then pans to nearby shelf of fiction literature.	In the genre of foreign intrique this is the image.
7. Montage effect: Pan of select spy/foreign intrigue titles and famous authors: LeCarre, Deighton, Greene, Fleming, Follett, etc.	Music: Spy theme - mysterious, full of intrique Since before Mata Hari, cloak and dagger fiction has swept us up in a clandestine world of secrets and spies.
8. Studio - montage effect - stills from books of scenes from popular spy films - Hitchcock, Bond, "Ipress File", etc.	Hollywood has, of course, expanded that image, creating a glamour-filled universe of danger and intrigue.
9. Slow dolly zoom out from static display of spy books, movie posters, signifying a moving away from fiction to reality.	SFX: Hollow wind But like Westerns and science fiction and similar popular themes, reality often is far removed from romance.
10. Int auditorium -scientist 1 at lecturn, delivering paper, speaking out to unseen audience, glancing occasionally down at notes.	SFX: Sync, voice of scientist speaking up briefly then under narrator In the real world of international secrets, intelligence gathering, scientific information, critical data, can be passed in the most innocent of ways. Information well known to you...
11. Medium shot of some eight members of lecture "audience" zoom in to listener who is paying especially close attention.	

	could be vitally new and important to someone else.
	SFX: Presence
12. Int Lab Office -MCU -slow pan, scientific books and notes on desktop. The camera merely scans them, capturing thier sense but not their essence	Some information is open and public and entirely peaceful--- but also a military use application--- a "dual use" technology.
Pull back and zoom out to medium shot of scientist 2, consulting notes as he writes in longhand.	You might think---and rightly so! That material you include in an article is not classified and can be made available to the public.
13. Int library -medium shot of reader, reading and taking notes from scientific periodical.	But that does not mean it is not sensitive, that it does not open new doors to the unacquainted.
	SFX: Sync, voice of scientist 3, explaining under narrator
14. Int - laboratory -Scientist 3, with visitor, standing amid laboratory paraphenalia, the former talking and gesturing proudly as the visitor, arms folded, listens intently.	Even the most personal of contacts is not immune. A visitor from overseas perhaps someone with whom you have worked on joint projects, who has become your friend--- may have ulterior motives in that friendship.

15. Scientist 3, as he continues to expound, demonstrate	That may be the unkindest rub of all. For this is your work, your proudest achievement, your professional reputation...
15a. Pan to visitor, listening	...about to be compromised, lifted, taken away---stolen!
16. Ext ANL grounds -morning - View of scientists, technicians coming to work, alighting from their cars, going into their respective labs, greeting one another	SFX: Presence The answer? The lesson? In some cases, it is obvious, in others, vague.
17. Follow an administrator as he likewise enters a building	Much of it is a gray area.
18. Int ANL lab morning In administrator's office as he enters, greets staff, then enters private office	There are laws, rules and regulations concerning the release of scientific information.
19. In the administrator's private office, he settles at his desk, sighs, regards a couple of classic texts and some scientific journals	There is, for example...a basic precept of science, a freedom to publish and discuss results of work openly with colleagues.
20. Close shot, inside of journal as it is read-/thumbed.	On the opposite side...there is clearly classified information.
21. Close shot, face of administrator, grimacing. Then he turns and stares off screen.	You know the labels, you may have worked on the projects.
22. Full shot, safe Confidential...Secret...Top begin slow zoom in to safe. Cut back and forth between slow zooms in to safe and face of administrator, to point up fact of hard thought.	Confidential...Secret...Top Secret Restricted Data.

23. Wide shot, administrator contemplating alternately safe and stack of scientific journals. 24. Full shot, safe.	And in between, that gray area. But to give you a guide to that area and the extremes was why this film was produced...For Your Information.
Super head titles: Secrets & Security: For Your Information	Music: Intro theme
25. FS Stock of documents headed -Secret, Top Secret, etc	
Super head title: Produced for U. S. Department of Energy 26. Scientific documents Super head title	
Office of International Security Affairs	
Fade out Fade in 27. Stock - Hawaii - romantic, touristy views of Oahu of Maui	Music: Hawaiian theme To get you in the mood, to show you where we are, let us bec , with a real life spy story. Simple...but that is the point! It began here,, in Hawaii, in early 1986.
28. Ext, Hawaiian hotel	A Soviet scientist was attending a conference.
29. Int hotel room -back view of man seated at desk, writing in longhand	Music: Change theme/more mysterious This...scientist...requested to visit a national laboratory, one deeply involved in nuclear weapons and research involving national defense.

30. Close shot, request being written	He said he wanted to discuss topics of mutual interest with the staff on a very non-controversial subject of research.
31. Stock Ext - DOE - HQ	The request...routine so far...was forwarded to Department of Energy headquarters.
32. Int DOE - HQ In office, over shoulder (back shot)	As a normal part of the review of the request, a background check was made of the individual.
of DOE official reading letter 33. Montage effect: computers, microfiche, etc.	SFX: Computer presence The information showed the would-be visitor was indeed a qualified scientist...
34. MS, single computer disk spinning, then snap zoom into disk for effect as it stops spinning	SFX: Heighten presence for effect but it also revealed him to be an agent for the K-G-B, the Soviet Union's spy service.
35. Int - DOE HQ Official, still unidentified, talking on phone with request, denying it. Phone is hung up.	Request denied!
36. Stock or live - int. airport departure area	The would be visitor was intercepted and escorted onto a plane leaving the United States.

37. Stock - Ext, romantic Hawaiian hotel	There are two points to that true story. One, it involved a bit of intrigue. So it does exist outside fiction.
38. Another view, Hawaii	Indeed, some scientists are spies---and some spies are scientists.
39. Stock or live seminar setting, with lecturer	But more importantly, it indicates that some foreign visitors may be less interested in the practice of science...
40. In lecture hall: over shoulder of man taking notes as if listening to lecture	than they are in stealing information---and how that can lead to trouble unless you are on guard.
41. Int ANL lab -administrator from earlier scenes, still at his desk, now working over other papers	And if there is an answer to this issue of technology security, that is it: be on guard. But on what authority? According to which laws or rules or regulations?
Administrator leans forward again, turning even more intense attention to books and documents before him.	Fortunately, it's all written down. The answers exist in DOE directives, in Federal laws and elsewhere. Of course, it is up to each of us to be knowledgeable of the guidance contained in these documents, and to use discretion and common sense in our interactions with foreign nationals.

42. Over shoulder of administrator as he begins to examine books. Zoom in slowly.	Let's examine them. And as we go, keep in mind that these should be *your* guides also, to avoid becoming a casualty of international intrigue.
Dissolve 43. FS, documents labeled as being confidential, secret restricted data, and top secret	Music: Change theme, to indicate change in film We will cover the following areas. First, how you should treat classified materials---those labeled Top Secret, Secret and Confidential.
44. Int - laboratory Medium long shot of scientist working alone, on some identified experiment	Second, we will delve into the gray area of subjects and materials which are not, or never were, classified---but which need special consideration because of dual use: a peaceful *and* military application.
45. Art - nuclear energy symbol	Virtually all of this area is concerned with national security. Of special interest to the Department of Energy are topics relating to nuclear energy and the prevention of the spread of nuclear weapons.

46. Int ANL lab Continuation of earlier scene, showing scientist in conversation with alien visitor	And finally, we will cover how you should deal with foreign colleagues...scientists from overseas who may be your friends---a gray area all by itself.
47. Dissolve - studio -FS, cover, "Understanding Classification"	Handling classified subjects is the easiest simply because it is the most obvious.
Pan to Fan, copies of local security guides	It is covered in detail in various DOE publications and in the security guides of your local facility.
Select publication is opened to typical page	Read them, absorb them, and stay up-to-date on understanding and handling of classified subjects.
48. Int Lab - Scientist continuing to work on experiment, now seen closer up	If you're working on a classified project, you know it and its level of classification.
49. Int administrators office - now doing paperwork	Indeed, you may be an authorized classifier.
50. Studio - FS, DOD, NASA, etc. - DB to get pubs. policy	These publications are of particular value in referring you to other documents dealing with the subject of classification.
Zoom in to ECU, middle of page, showing reference to Executive Order 12356	Such as here, a reference to an Executive Order relating to information on National Security.

51. INT administrators office - close shot of administrator consulting local security guide as he continues doing paperwork. Weapons lab guides -Fermi (OPSEC)	So your local publication is valuable as a basic guide in itself, and as a source to more specific information.
52. INT Lab - scientist still seen working. Pan to same local guide on nearby desktop	At the least, you should have a copy for your own reference.
	Music: Change theme
53. Stock - Ext. estab. nuclear power plant -then a computer - then a laser facility -then a lab bench	It is when we move into that gray area of material which is not classified yet sensitive that confusion may begin, especially as concerns nuclear energy.
54. INT nuclear power plant - general view(s) to estab. that we are in a peaceful use power station	Basically, that is because so much knowledge about nuclear technology has to do with its peaceful uses. We wish to share and spread that knowledge.
55. Stock - nuclear energy conference	The Department of Energy is the premier government agency involved in that effort, deeply and intimately committed in international cooperation on energy resources---including, of course, nuclear energy.
56. Individual at conference delivering paper. (Note: could be done as live shot, of scientist, at speaker's podium, reading paper.) 57. Wide shot, nuclear energy conference in session	And so may you be involved. And personally. And rightfully! As much information about nuclear

	technology is declassified...it is only natural to share the wealth" as it were.
58. INT Laboratory - Reprise of earlier scenes, showing scientist still with visitor. Now for variation they're going over computer readout together. PAN to scientist	But here too, is where you should watch yourself with special caution. For while information may be unclassified, it remains, information on nuclear technology. And its applications can be as varied.
59. Studio - FS, covers of copies of 10CFR, DOE 1240.2, Section 148 of Atomic Energy Act, and Dept. of Commerce Regs. cover (Atomic Energy Act of 1954 NNPA)	These documents, Acts of Congress, Code of Federal Regulations, Department of Energy Orders are your principal guidelines in this highly sensitive area.
60. Dissolve: 10 CFR 810 (Make sure title shows)	Certain sections of Title 10 of the Code of Federal Regulations should bear your attention.
61. INT Laboratory -medium shot of scientist, at desk working alone	Part 810 prohibits all persons under United States jurisdiction who are engaged in the production of nuclear materials from doing the same outside the U. S.
62. INT nuclear prod plant - view of plant interior	Interpretation of this law is quite wide. Export, in this case, includes providing of information which would go out of the country.

Next come a pair of Department of Commerce regulations concerning export of nuclear materials and technology. Export Administration Regulation 378.3 sets forth license requirements for export of certain commodities or information and implements controls to prevent proliferation of nuclear weapons.

EAR 379.4 expands and clarifies 378.3 by specifying license requirements for the export of technical data related to certain nuclear technologies.

Section 148 of the Atomic Energy Act directs the Department of Energy to prohibit unauthorized dissemination of certain information in three broad areas:

The design of nuclear production or utilization facilities.

Security measures for such facilities and nuclear material in those facilities...

or in transit. And thirdly...

the design, manufacturer and utilization of any nuclear weapon or component which information once was classified or restricted.

	Music: Change theme
69. Studio - cover, DOE 1240.2	Department of Energy Order 1240.2 is the most detailed and thorough document---and thus it is the one with which you might become most familiar.
70. FSW, open 1240.2 zoom in	It is almost a compendium of all the other laws and regulations in that it delineates, over many pages, exactly what can be disseminated, both here and overseas---and to whom.
71. Stock - stills -views of nuclear reactor, nuclear production plant, atomic submarine, complex electronic (computer) mainframe control panel.	It includes a long list of sensitive subjects, ranging from uranium enrichment, and production technologies, to reprocessing and weapons systems.
72. Stock - nuclear cask truck on road	It covers international cooperation in nuclear waste management technologies.
73. Nuclear production plant	It covers---once again---such sensitive facilities as weapons and nuclear production complexes.
74. Studio - FS, slowly spinning globe - zoom slowly	It lists selected countries. Some, such as Communist Bloc nations, will not surprise you. Others might.

75. INT O'Hare airport Travelers passing through customs	And it outlines our policies and objectives for the international cooperation program.
Dissolve	
76. Stock - Ext. estab. United Nations bldg.	Understandably, the issue of to whom you may provide information is the most sensitive if for no other reason than it can be the most personal.
77. INT - UN Bldg. General Assembly in session	The basis is, of course, the visitors's citizenship.
78. Stock - still - Red Square, Moscow	We'll get rid of the most obvious case straight away. Where the Soviets are concerned, bear just this in mind...
79. Kremlin 80. Stock - Hawaiian hotel	*No* Soviet scientist can leave his or her country without approval of the intelligence organization.
	The Soviet scientist who wanted to visit the U.S. mainland was a case in point. He didn't just *have* KGB approval, he *was* the KGB!
81. EXT ANL grounds - long shot, two persons sitting on bench in park like setting, or seen from afar walking and talking	The point is simple: Where any visitor from the Soviet Union or a communist controlled country is

	concerned, simply *assume* the intention, if not the attitude, includes a deliberate attempt to acquire technology that could be used to the detriment of U. S. security interests.
82. Art - Litho list of countries from 810 being scrolled	Many countries are not signatories to the Nuclear Non-Proliferation Treaty---a fact which severely constrains the type of information and technology that can be exchanged.
83. INT administrator's office - seen in long shot, still pondering papers before him, now appearing even deeper in thought as though perplexed.	So what do you do? Where do you turn? In the face of such seeming paradoxes, what becomes your authority? Where is the definitive answer?
84. INT Laboratory -Long shot, scientist, at his desk, like administrator seemingly lost in confusing thought as he ponders document before him. Zoom in slowly to close shot of scientist as he appears to become more resolved, as he looks like he is on verge of finding answer	Like your work itself, it involves using scientific methods: following procedures, building on bases of what has occurred before, applying common sense...
85. Studio - 10 CFR, DOE1240.2, EAR pubs. security guides	and by going to established doctrine. The publications and regulations we have touched upon. They are your principal guides. And even if they change, they will likely remain so.

86. FS, book which "spies" in opening scenes used to exchange message, slip of paper seen emerging from center of book	Apply your know how, and in the end, there should be no mystery about it. Music: Up to End
Super end titles/credits Produced by: Argonne National Laboratory Film and Video Group	

United States General Accounting Office

GAO

Report to the Chairman, Committee on
Governmental Affairs, U.S. Senate

October 1988

NUCLEAR NONPROLIFERATION

Major Weaknesses in Foreign Visitor Controls at Weapons Laboratories

GAO/RCED-89-31

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-221179

October 11, 1988

The Honorable John Glenn, Chairman
Committee on Governmental Affairs
United States Senate

Dear Mr. Chairman:

On July 10, 1987, you asked that we determine the extent to which foreign nationals participate in activities at the Department of Energy's weapons laboratories. You also asked us to assess the effectiveness of the Department's controls to identify foreign nationals that pose a security and/or proliferation risk. This report provides the information you requested.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies of this report to appropriate congressional committees, the Secretary of Energy, and the Director, Office of Management and Budget. We will also make copies available to others upon request.

This work was performed under the direction of Keith O. Fultz, Senior Associate Director. Other major contributors are listed in appendix IV.

Sincerely yours,

J. Dexter Peach

J. Dexter Peach
Assistant Comptroller General

Executive Summary

Purpose

This country's nuclear weapons program, conducted by the Department of Energy (DOE), presents an inviting target for foreign information gathering efforts. DOE owns a broad spectrum of facilities (most are contractor operated) to carry out its classified nuclear weapons activities as well as unclassified research in energy and other scientific areas. Thousands of foreign nationals annually visit and/or participate in unclassified research at DOE's facilities. However, unclassified visits are not without risk. Certain countries are known to be seeking U.S. weapons data, and DOE studies have shown that it is possible to derive classified and sensitive information from unclassified access to these facilities.

As a result of these risks, the Chairman, Senate Committee on Governmental Affairs, asked GAO to assess DOE's controls over foreign participation in unclassified activities at three weapons facilities: Lawrence Livermore National Laboratory, California, and Los Alamos National Laboratory and Sandia National Laboratories, New Mexico. (See ch. 1.)

Background

The Atomic Energy Act allows foreign participation in unclassified research at DOE laboratories to encourage international cooperation in energy. As a result, individuals from communist countries, most notably the Soviet Union and China, and countries identified as sensitive by DOE because they are a security and/or proliferation risk, such as Pakistan and Israel, visit the laboratories.

DOE Order 1240.2 establishes certain controls to limit the risk resulting from foreign access to its facilities. DOE requires background checks on certain individuals and headquarters review and approval of visits by citizens from communist countries. Further, DOE requires monitoring and post-visit reporting for some visits.

Foreign participation at the laboratories can either be for (1) a visit—up to 1 week to hold technical discussions, tour facilities, or collaborate on problems—or (2) an assignment—extended stays up to 2 years to carry out projects or research. Between January 1986 and September 1987, DOE allowed about 6,700 foreign nationals access to the weapons laboratories. Of these, 222 were from communist countries and 675 were from other sensitive nations. GAO randomly selected and reviewed the files for 181 communist country and 637 sensitive country visitors to the laboratories during this period. (See ch. 1.)

Results in Brief

Major weaknesses exist in DOE's foreign visitor program. As a result, suspected foreign agents and individuals from facilities suspected of conducting nuclear weapons activities have obtained access to the laboratories without prior DOE knowledge. Specifically,

- DOE generally does not follow its own requirements and obtain background information on foreign visitors and assignees from communist or sensitive countries. Further, DOE has, but does not use, other available data to prescreen visitors from foreign facilities suspected of nuclear weapons-related activities.
- DOE does not identify and review all visits that involve sensitive weapons-related subjects. Of 818 visits, DOE identified only 1 as involving a sensitive subject; GAO found at least 37 others. Further, DOE does not consider a number of other weapons-related activities as sensitive subjects. At least 14 visits involved these activities.
- DOE does not enforce various internal control requirements for approving, monitoring, and reporting foreign visits. Further, DOE does not have an integrated information system or conduct reviews of the foreign visitor program.

Principal Findings

Little Review of Foreign Visitors

DOE does not obtain timely and adequate information on foreign visitors before allowing them access to the laboratories. Of the 181 communist visitors or assignees that GAO reviewed, 176 required background checks. However, DOE did not obtain this data for 119. DOE requested data on the remaining 57 but received the results for 51 either during the visit or after it occurred. GAO found several cases where DOE allowed visitors with questionable backgrounds—including three suspected foreign agents—access to the laboratories.

In addition, DOE obtained even less background information on visitors and assignees from other sensitive countries. Of the 637 visitors from countries such as India, Israel, and Pakistan, DOE required background checks for only 77. Of these, DOE received information on 14; DOE did not receive background data for 46 because it would have taken too long, officials said. DOE received background data for the remaining 17 individuals after the visit began. Further, DOE has developed a classified "watch" list that identifies foreign organizations suspected of conducting nuclear weapons activities. GAO found that about 10 percent of the 637 visitors were associated with these organizations, but DOE did not request background data for them.

DOE officials acknowledge that these problems exist. However, they stated that they are improving their procedures for obtaining background data. Because these procedures had not been fully implemented, GAO did not assess their effectiveness to correct the problems identified. (See ch. 2.)

Potentially Sensitive Subjects

DOE allows foreign nationals from communist and proliferation-risk countries into the laboratories to discuss subjects that could assist nuclear weapons programs. DOE has identified 18 sensitive subjects; DOE headquarters must approve any visit or assignment that involves them. During GAO's sample period, DOE identified only 1 of the 818 communist and other sensitive country visits as involving a sensitive subject. GAO found at least 37 visits related to subjects listed as sensitive by DOE, such as inertial confinement fusion and isotope separation. DOE headquarters reviewed 15 because the visitor was from a communist country, not because the visit involved a sensitive subject.

Further, DOE has not included other activities related to nuclear weapons research, development, and testing as sensitive subjects. These include special cameras, astrophysics, and high explosives. During the 21-month period that GAO reviewed, 14 foreign nationals visited the laboratories to discuss issues that could be related to nuclear weapons or other sensitive technologies that are not included on DOE's sensitive subject list. None of these visits received DOE headquarters review and approval. (See ch. 2.)

Internal Control Weaknesses

DOE has not enforced certain internal controls for managing the foreign visit and assignment program. For example, visit and assignment approvals were made at improper levels or were approved after access was granted. In addition, the field offices must provide a security plan prior to some visits and ensure that a post-visit report is submitted to DOE headquarters to assess the type of information provided. However, only 89 of 248 required security plans were provided and only about 25 percent of the post-visit reports. These problems could have been identified by internal reviews. However, neither DOE headquarters nor the field offices has conducted reviews of the visit and assignment program at the weapons laboratories.

In addition, DOE has no integrated system to obtain and disseminate foreign visitor information to its field offices. Consequently, these offices lack important data that may be relevant to their access approval decisions. GAO found that an individual denied access to one laboratory visited another without that laboratory knowing about certain derogatory information. Further, over 13 percent of the visitors from communist or sensitive nations were not in the DOE headquarters database. (See ch. 3).

Recommendations

To prevent security breaches concerning nuclear weapons-related information, GAO recommends that the Secretary of Energy

- Revise the foreign visits and assignments order to (1) require that background checks are completed prior to admitting a foreign national to a weapons laboratory, (2) require the use of additional criteria, such as the watch list, to identify potentially sensitive visitors, and (3) expand the sensitive subjects list to include additional areas that could be useful to adversary or proliferant nations.
- Establish an integrated system to provide DOE and the laboratories timely and pertinent information to use when approving foreign visits.
- Require periodic evaluations of field office and laboratory compliance with the requirements of DOE's foreign visit and assignment order.

Agency Comments

GAO discussed the facts presented in this report with DOE headquarters and field office officials. Generally, they agreed with the facts but did offer some clarifications that were incorporated where appropriate. As requested, GAO did not ask DOE to review and comment officially on this report.

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Abbreviations

CIA	Central Intelligence Agency
DOE	Department of Energy
FBI	Federal Bureau of Investigation
GAO	General Accounting Office

Introduction

Foreign intelligence efforts against the United States are becoming an increasing threat to national security. Events in recent years have revealed espionage activities not only from communist nations but also from friendly countries, such as Israel. The U.S. nuclear weapons program presents an inviting target for foreign intelligence efforts. In fact, knowledgeable federal officials generally believe that both communist countries and nations suspected of developing nuclear weapons attempt to obtain information on U.S. nuclear weapons activities.

The Department of Energy (DOE) is responsible for conducting the nuclear weapons program. DOE owns a broad spectrum of facilities (most are contractor operated) to carry out this mission. DOE facilities produce the special nuclear material—enriched uranium and plutonium—needed for nuclear weapons as well as other materials needed for the current generation of weapons. Other facilities design, develop, test, and manufacture the weapons for the U.S. nuclear arsenal. DOE facilities are also involved in other classified activities that involve national security issues, such as the Strategic Defense Initiative and conventional weapons development. In order to protect nuclear material and classified or otherwise sensitive information and deter acts of sabotage, DOE has a number of physical and information security measures to limit unauthorized access to these facilities.

However, DOE also conducts unclassified research in energy and other scientific areas, and some of its most sensitive facilities are involved in both classified and unclassified activities. In conjunction with its unclassified activities, thousands of foreign nationals visit DOE's facilities annually. DOE's policy is to encourage these visits as long as they are consistent with DOE's mission and do not unduly interfere with ongoing programs. Although exact figures on the number of foreign visitors are not available, DOE estimates that between 15,000 and 20,000 foreign nationals visit all DOE facilities each year.

Foreign nationals visiting or assigned to the weapons laboratories can pose a security risk. Various DOE and other documents identify foreign espionage and information gathering activities as a major concern and point out that sensitive information may have been lost to foreign countries. For example, a January 1987 Department of Defense security awareness bulletin states that communist and other countries pose a threat to the United States, and every kind of information is vulnerable, including classified government data and unclassified technology. Further, a 1983 DOE study concluded that a significant amount of important technology may have been lost to potential adversaries through visits and assignments. More recently, DOE vulnerability assessments conducted at various laboratories in 1984 and 1985 concluded that information on classified programs could be derived from available unclassified data or observing activities at these facilities.

Overview of the Activities Conducted at DOE's Nuclear Weapons Laboratories

DOE has a number of missions in energy, defense, and scientific research and has an extensive field system of research, technical development, manufacturing, and administrative facilities. To accomplish its missions, DOE has 9 multiprogram laboratories and approximately 30 specialized laboratories that perform fundamental scientific work and applied research and development for the department. Although most of these facilities conduct unclassified, nonweapons activities, three laboratories—Lawrence Livermore National Laboratory, California; Los Alamos National Laboratory, New Mexico; and Sandia National Laboratories, New Mexico—perform a unique role for DOE. These laboratories conduct research and development functions for DOE's nuclear weapons program and conduct other classified activities related to defense and energy issues.

Lawrence Livermore National Laboratory

The Lawrence Livermore National Laboratory, established in 1952, is operated by the University of California for DOE. The laboratory carries out all phases of nuclear weapons research, development, design, and testing. In addition, Livermore conducts classified research associated with the Strategic Defense Initiative, including the nuclear pumped x-ray laser, free-electron laser, and particle beam technology. Livermore also is the lead laboratory for the development of the lasers for the inertial confinement fusion process and the atomic vapor laser isotope separation process for uranium enrichment.

Los Alamos National Laboratory

The federal government established the Los Alamos National Laboratory in 1943 to develop the nation's first nuclear weapon. The laboratory, also operated by the University of California, conducts both classified and unclassified programs. Los Alamos carries out activities related to all phases of nuclear weapons research, development, design, and testing and conducts defense-related research on particle beams, free-electron lasers, and electromagnetic rail guns. It also supports U.S. arms control measures through work on foreign technology assessments, technology transfer issues, and detection of nuclear explosions. Further, Los Alamos conducts inertial confinement fusion research and plutonium processing and fabrication research for weapons production purposes.

Sandia National Laboratories

The Sandia National Laboratories, established in 1949, are operated by the American Telephone and Telegraph Company for DOE under a no-profit, no-fee contract, and work in conjunction with the Livermore and Los Alamos laboratories to design and develop weapons. The laboratories conduct research, development, and engineering on all facets of weapons design and development except the nuclear explosive components. For example, Sandia develops weapons structures, aerodynamic shapes, and delivery devices and conducts engineering activities related to the design of electrical arming and firing systems.

Although the three laboratories perform highly classified, highly sensitive weapons activities, they also conduct other energy programs. In this capacity, they perform a number of unclassified activities, such as nuclear waste management, geothermal and solar energy, and physics research.

Controls Over Foreign Access to the Laboratories

The Atomic Energy Act of 1954, as amended, establishes U.S. policy for controlling information and technology related to the development of nuclear weapons. The act requires DOE to classify and control weapons information and prohibits its dissemination to foreign countries unless authorized by the President. Further, the act requires strong federal oversight and controls over any U.S. assistance to foreign nations that may directly or indirectly assist in the production of special nuclear material or nuclear weapons.

However, the act also provides for a program of international cooperation to develop the peaceful uses of nuclear energy. Because of DOE's involvement in peaceful nuclear technology and the unclassified nature of many activities that it conducts, foreign visitors are permitted access to the three weapons laboratories. During the 21-month period from January 1986 through September 1987, about 6,700 foreign nationals visited or were assigned to one of these laboratories. About 900 of the visitors were from communist or other sensitive countries including those suspected of developing nuclear weapons, such as India, Israel, and Pakistan. Appendix I shows the number of foreign visitors from communist-controlled or other sensitive countries.

To ensure that foreign nationals do not pose a security or proliferation risk, DOE Order 1240.2 (Visits and Assignments by Foreign Nationals, Jan. 5, 1981) establishes procedures for controlling access for unclassified purposes. Although DOE allows some foreign nationals—primarily individuals from the United Kingdom—access to its facilities for classified purposes, we limited our work to the unclassified visits and assignments. In addition, in a previous report, we pointed out that in March 1985 an internal group recommended that DOE review order 1240.2 to determine whether it provided adequate controls.[1] DOE began to revise the order in October 1986. As of August 1988, DOE had not completed this effort. Therefore, we relied on the January 1981 order and supplements to it to conduct our work.

As defined in the order, foreign national access can be for a visit or an assignment. Visits—short-term stays of up to 1 week—allow foreign nationals to participate in technical discussions and orientation tours, observe projects or experiments, or collaborate on problems of mutual interest without extensive participation in the work of DOE facilities. Assignments—periods greater than 1 week but not exceeding 2 years—allow foreign nationals to gain experience or to carry out projects or research that are a part of, or consistent with, the specific facility's objectives. Assignees to DOE facilities include both regular and temporary employees, as well as guests and consultants.

DOE's visit and assignment order identifies the weapons laboratories as sensitive facilities but generally allows most foreign nationals to visit the laboratories with little DOE oversight and approval. However, DOE has recognized that some foreign visits and assignments represent a security risk. As a result, the order provides that foreign access to the laboratories may be of concern if it involves

- a sensitive country. The order identifies 68 sensitive countries, including communist-controlled nations, countries suspected of developing nuclear weapons, and other nations viewed as a national security risk. Appendix II shows these countries.
- a sensitive subject. The order contains 18 subject areas in which foreign involvement should be prohibited unless under an international agreement. The sensitive subjects include unclassified data related to special nuclear material production, inertial confinement fusion, and nuclear weapons-related technologies. Appendix III shows these subjects.

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[1] Nuclear Nonproliferation: Department of Energy Needs Tighter Controls Over Reprocessing Information (GAO/RCED-87-150, Aug. 17, 1987).

- a secure area. Each laboratory has designated areas where sensitive and classified information and equipment are located.

If a visit or assignment meets any of these criteria, the order provides that DOE must institute additional procedures. Although the procedures vary depending upon the individual circumstances, the order includes requirements for indices checks,[2] access approval by the responsible DOE field or headquarters office, security plans documenting the controls to be in place during the visit or assignment, and reports by the sponsoring organization (host reports) to document the events that occurred and information exchanged between laboratory officials and the foreign national.

Organization for Managing Visits and Assignments

To carry out its responsibilities, DOE uses a three-tiered management approach that includes DOE headquarters, field offices, and contractors. The Assistant Secretary for International Affairs and Energy Emergencies has overall responsibility for the foreign visitor and assignment program. This office develops policies and procedures, serves as DOE's central contact point, and approves certain types of visits and assignments, such as those involving sensitive countries to discuss sensitive subjects. In addition, the Assistant Secretary for Defense Programs is responsible for the security-related aspects of foreign visits and assignments. This office initiates indices checks, establishes procedures for the control of visits to secure areas, and reviews and concurs in any visit or assignment to the weapons laboratories involving access to secure areas or assignments by foreign nationals from communist countries.

DOE headquarters has also delegated significant aspects of program implementation to the field offices with oversight responsibility for the weapons laboratories. Both the San Francisco Operations Office—which is responsible for Livermore—and the Albuquerque Operations Office—which oversees both Los Alamos and Sandia—approve foreign visits and assignments under their jurisdiction, such as those involving nonsensitive countries to discuss nonsensitive subjects; develop security plans; and ensure that the host submits the required report. To carry out these responsibilities, each field office has established its own guidelines to implement DOE Order 1240.2. For example, San Francisco Management Directive 1240.2 and Albuquerque Order 1240.2 set out more stringent requirements for indices checks.

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[2] Reviews of investigative and intelligence files of appropriate government agencies to determine whether a particular foreign national may endanger national security.

Further, the operations offices have delegated certain responsibilities to the contractors that operate the laboratories. For example, the contractors generally initiate the paperwork to request approval for a visit or assignment and can approve certain types of visits and assignments delegated to them by DOE's field offices. In addition, contractor staff hosting a foreign visitor or assignee must provide reports to DOE in certain instances. The contractors have also established procedures to carry out their responsibilities.

Objectives, Scope, and Methodology

On July 10, 1987, the Chairman, Senate Committee on Governmental Affairs, asked us to determine the extent to which foreign nationals participate in activities at DOE's weapons laboratories and assess the effectiveness of DOE's controls to identify those that pose a security and/or proliferation risk. On the basis of subsequent discussions with the Chairman's staff, we agreed to issue an unclassified report. As a result, some of the information we obtained cannot be presented in its entirety in this report.

To obtain an overall perspective on DOE's foreign visitor program, we met with DOE headquarters, field office, and contractor officials. At headquarters, we met with officials in the Office of International Affairs and Energy Emergencies and the Office of Defense Programs. At the San Francisco and Albuquerque offices, we met with officials in the Safeguards and Security Division responsible for managing foreign visit and assignment activities at their respective laboratories. At the laboratories, we met with officials responsible for processing requests for foreign visitor approvals and for laboratory security. We obtained information on the purpose of foreign visitor access to the weapons laboratories, the benefits derived, the potential risks inherent in the activity, and their viewpoints on the effectiveness of the current process. We obtained copies of the applicable DOE headquarters and field office orders—DOE Order 1240.2, Albuquerque Operations Office Order 1240.2, San Francisco Operations Office Management Directive 1240.2, DOE's July 1988 Internal Control Systems Manual, and contractor guidelines for controlling foreign visits and assignments. Using the information provided, we assessed the adequacy of DOE's internal controls for approving, monitoring, and reporting foreign visits and assignments. Further, we met with officials from the Federal Bureau of Investigation (FBI) and Defense Intelligence Agency to discuss their views on the risk associated with foreign nationals at the weapons laboratories.

We obtained and reviewed various safeguards and security studies prepared by DOE that addressed concerns about foreign visits and assignments. These studies included a September 1983 report on controls over foreign visits and assignments prepared by a contractor for DOE; the December 1986 Operation Cerberus report that addressed a number of security concerns regarding DOE facilities, including foreign visits; and a November 1987 analysis of visit and assignment requests prepared by the Office of Defense Programs. We also reviewed vulnerability assessments that DOE had performed at the weapons laboratories in 1984 and 1985. These assessments addressed the potential for foreign countries to obtain sensitive and classified information through unclassified sources.

In addition, to assess the effectiveness of DOE's controls over foreign visitors, we reviewed documentation supporting 1,118 of the 6,662 visitors to the three laboratories between January 1986 and September 1987. For Livermore and Sandia, we reviewed 100 percent of the communist and other sensitive country files; at Los Alamos we randomly selected about 78 percent of those files for review. In addition, we randomly selected 100 nonsensitive country visitor files at all three laboratories. Table 1.1 shows the total number of communist, other sensitive country, and nonsensitive country visitors (including assignees) and the number of files that we reviewed.

Table 1.1: Visitors to DOE Weapons Laboratories That GAO Reviewed — January 1, 1986 Through September 30, 1987

	Communist country visitors		Sensitive country visitors		Nonsensitive country visitors		Total	
	Total	Reviewed by GAO	Total	Reviewed by GAO	Total	Reviewed by GAO	All visitors	Reviewed by GAO
Livermore	**60**	60	**313**	313	**2,354**	100	2,727	473
Los Alamos	**140**	99	**223**	185	**2,319**	100	2,682	384
Sandia	**22**	22	**139**	139	**1,092**	100	1,253	261
Total	**222**	**181**	**675**	**637**	**5,765**	**300**	**6,662**	**1,118**

For each of the 1,118 cases, we obtained information on the (1) dates DOE requested and obtained the required indices checks from the FBI or the Central Intelligence Agency (CIA), (2) results of these checks, where available, and (3) number and scope of security plans and host reports prepared. In addition, where possible, we compared the purpose of the visits or assignments to DOE's sensitive subject list to determine the extent to which DOE and the contractors complied with the procedures established.

Further, to assess the impact of DOE's practices for obtaining indices checks, we asked the FBI to check the background of 151 foreign nationals for us. These visitors had been granted access to the laboratories between January 1986 and September 1987, but DOE did not have background checks for them. Where FBI officials had information, they provided the data to us. We also asked the CIA to perform background checks for us, but its officials would not agree to do so.

We also identified other sources of information that could provide a perspective on the backgrounds of individuals that DOE admitted to the laboratories. For example, we obtained the Nuclear Proliferation Watch List that identifies facilities and organizations in foreign countries that may be involved in nuclear weapons development activities. We compared the information in the watch list to the visitors and assignees to DOE's three laboratories during the 21-month period covered by our review.

Limitations on the Scope of Our Work

We encountered a number of limitations in conducting our work. As discussed below, these limitations may have prevented us from fully assessing the effectiveness of DOE's foreign visitor control program.

- Little documentation was available on problems that may have occurred as a result of foreign visits. DOE officials told us that visits and assignments that may involve criminal and/or espionage activities are referred to the FBI, and they could not discuss these with us. According to FBI officials, as a matter of policy they do not discuss ongoing investigations; consequently, we were unable to obtain data on criminal and/or espionage activities committed by foreign nationals at the weapons laboratories during our review period. In addition, we were unable to obtain any DOE reports of hostile contacts by foreign nationals. The November 1985 National Security Decision Directive 197 requires DOE and contractor employees to report such contacts.
- Complete data on the backgrounds of foreign visitors could not be obtained. Some indices check data provided by the FBI and CIA are classified and remain within their control. Although FBI officials agreed to our reviewing the classified data they provided to DOE, CIA's Office of Congressional Affairs staff would not allow us to review their information. CIA staff believed our doing so could reveal intelligence sources and methods. In an attempt to alleviate this concern, we asked the CIA to review the data to ensure that sources and methods information was removed before they provided the data to us. However, the CIA denied

this request as well as a request to perform indices checks on some foreign visitors for us.

- Our access to DOE files was limited because they contained classified CIA and FBI data. We requested the results of indices checks on all communist and other sensitive country visitors to the weapons laboratories. Since the files included classified CIA and FBI data, we were not granted direct access to this information. Instead, DOE pulled the files and removed the classified data. Because of this procedure, we could not independently verify that we obtained, or were made aware of, all pertinent information on the visitors we selected for review.

Because of these limitations, this report may only present a limited perspective of the problems that DOE has encountered in implementing its visitor control program.

We discussed the facts in this report with DOE officials in the Offices of Defense Programs and International Affairs and Energy Emergencies, the Albuquerque and San Francisco Operations Offices, and at the three laboratories. Although they generally agreed with the facts presented, they offered some clarifications that were incorporated where appropriate. As requested, we did not ask DOE or the contractors to review and comment officially on a draft of this report. Our work was performed between July 1987 and August 1988 in accordance with generally accepted government auditing standards.

Chapter 2

DOE Does Not Have Effective Procedures to Identify High-Risk Visits and Assignments

Because DOE's weapons laboratories possess sensitive information that would be valuable to foreign nations, it is imperative that DOE have adequate assurance that foreign visits and assignments to the laboratories do not represent a security or proliferation risk. To do this, DOE needs to ensure that it identifies individuals who pose a security or proliferation risk before they obtain access to a weapons laboratory, and the individuals do not obtain information that could benefit a nuclear weapons program. In this regard, DOE has established procedures to review the backgrounds of certain individuals and to review visits and assignments that may involve potentially sensitive subjects.

Nevertheless, DOE's foreign visitor approval process does not provide adequate scrutiny of visitors and assignees to the weapons laboratories or to the subjects discussed. Specifically, DOE does not follow its own procedures for obtaining indices checks and identifying visits that involve sensitive subjects. Further, DOE's procedures, if followed, are not fully adequate because it does not use all available information to identify high-risk individuals and sensitive subjects. As a result

- suspected foreign agents and individuals associated with facilities believed to be involved in nuclear weapons activities have obtained access to the laboratories without prior DOE knowledge.
- foreign nationals—including those from countries suspected of developing nuclear weapons—have participated and/or discussed subjects related to nuclear weapons without appropriate DOE oversight.

DOE officials recognized that problems exist with the procedures for reviewing potentially high-risk visits and assignments to these laboratories. According to these officials, actions are being taken to improve the approval process.

DOE Does Not Adequately Review the Background of Visitors and Assignees

One method that DOE uses to determine if foreign nationals represent a security risk is to obtain indices checks from appropriate government intelligence and investigative agencies, such as the CIA and FBI. At DOE's request, these agencies review their files to determine whether any information exists that indicates a foreign individual may endanger national security. If information exists, these agencies provide it to DOE for use in the approval decision. DOE Order 1240.2 requires these checks for individuals from

- communist countries when they are to be assigned to the weapons laboratories or when they visit secure areas of these facilities and

- other sensitive countries when they will be visiting secure areas.

The order also allows DOE field offices to request additional indices checks at their discretion. Both the Albuquerque and San Francisco Operations Offices have expanded their indices check requirements. These offices require laboratory officials to request indices checks for all visitors from communist countries. In addition, San Francisco requires indices checks on all assignees to Livermore regardless of country of origin. However, neither DOE headquarters' nor the field offices' procedures require that the indices check results be received before approving visits or assignments by foreign nationals.

We found, however, that DOE and the laboratories request and receive only a small number of the required indices checks for visitors and assignees from communist and other sensitive countries. In addition, the majority of the checks that are performed are completed after access to the weapons laboratory has occurred. Of the 181 individuals from communist-controlled countries we reviewed, 176 required indices checks.[1] For these individuals, DOE

- obtained only 6 completed indices checks before the initiation of the visit or assignment,
- received indices data for 51 individuals either during the visit or after it had been completed, and
- did not obtain indices checks for 119 individuals.

Similarly, DOE and the laboratories obtained few indices checks for individuals from other sensitive nations before granting access to a weapons laboratory. Of the 637 foreign nationals from other sensitive countries that we reviewed, only 77—about 12 percent—were required to have indices checks under DOE's order and the field offices' requirements. Of the 77, only 14 were completed prior to the visit or assignment. Table 2.1 shows the extent to which DOE obtained required indices checks for foreign nationals from communist and other sensitive countries that visited or were assigned to the three laboratories between January 1986 and September 1987.

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[1] Prior to July 1986, Yugoslavia was not listed as a communist-controlled country in DOE's order; consequently, indices checks were not required for these visitors. During our sample period, DOE allowed five Yugoslavians to visit the laboratories before it changed the order.

Table 2.1: Indices Checks Performed for Communist and Other Sensitive Country Visitors and Assignees - January 1986 to September 1987

	Visits			Assignments		
Communist	**Completed before**	**Completed during or after**	**Not completed**	**Completed before**	**Completed during or after**	**Not completed**
Livermore	3	40	17	•	•	•
Los Alamos	2	5	52	1	6	28
Sandia	•	•	19	•	•	3
Total	**5**	**45**	**88**	**1**	**6**	**31**
Other sensitive						
Livermore	•	•	1	14	17	4
Los Alamos	•	•	7	•	•	8
Sandia	•	•	24	•	•	2
Total	**0**	**0**	**32**	**14**	**17**	**14**

A number of reasons account for DOE's failure to obtain indices checks. For example,

- The field office did not request the required indices checks. Of the 143 checks required for Los Alamos and Sandia, 138 were not requested by the Albuquerque Operations Office for visits and assignments to these laboratories. The remaining five had been requested but were not completed at the time of our audit.
- Indices checks take a long time to complete, and many visits are conducted on short notice. As a result, insufficient time is available to obtain indices data. In some instances, the visit request was provided 2 to 3 months before the visit, but the intelligence agencies took over 6 months to provide the data to DOE. In other instances, visit requests were submitted less than 3 weeks before the visit, and indices data could not be obtained. Of the 22 checks required for Livermore but not completed, 20 had been requested but were not completed at the time of our work. The remaining two checks had not been requested.

DOE's San Francisco Office has recognized that problems exist in the performance of indices checks and has attempted to strengthen its requirements. In August 1986, this office directed that indices checks results must be received before foreign nationals from communist countries would be allowed access to Livermore. However, this requirement has not been successfully implemented. Of 30 communist visitors to the laboratory since the implementation of this requirement, the field office received only two completed indices checks before access was granted. The field office granted a waiver from the indices check requirement in 15 instances and allowed access to the laboratory without a waiver for the remaining 13 communist visitors.

Impact of DOE's Not Obtaining Indices Checks

As a result of not obtaining indices data, DOE allowed foreign nationals into the laboratories who might have posed an unacceptable risk. Some examples are discussed below.

- An individual was allowed access to a weapons laboratory for a multi-day visit before the indices check was completed. However, data received by DOE 1-1/2 months after the visit indicated that the individual was known to be connected with a foreign intelligence service.
- An individual was allowed access to a laboratory for a 1-day visit, but no notification of the visit was given to DOE and no indices check was requested. However, a subsequent indices check showed that the individual was connected with a foreign intelligence service.
- An individual was granted access to two laboratories over a 1-week period. One laboratory granted the individual access for a visit without requesting the required indices check; the other did request an indices check, but the results were not completed until 2 months after the visit. The indices data showed that this individual was suspected of having connections with foreign intelligence activities. Further, at one laboratory the individual was granted access to a secure area under escort, even though the field office manager notified DOE headquarters prior to the visit that he intended to limit the visitor's access only to public areas.
- Three individuals that a federal agency official told us were obtaining U.S. nuclear weapons development and other sensitive information were allowed into laboratories on several occasions. DOE never obtained indices checks for one and received the checks for another 8 months after the visit occurred. DOE denied access to the third individual, but the person visited with laboratory officials off-site, obtained access to a federal (non-DOE) facility, and with the help of the laboratory host observed the operation of his program on a supercomputer.

Further, other information may exist on these and other individuals that we could not obtain. As discussed in chapter 1, we were not given the opportunity to review the data that CIA provides DOE. Of the 88 instances shown in table 2.1 where DOE obtained indices data, the CIA provided data for 12 individuals. Without having access to CIA information, we could not verify all the results of indices checks provided to DOE.

For the most part, laboratory and field office records do not indicate that precautions above those normally required—such as security plans—were taken for these individuals. However, one individual was part of a high-level group and was subject to stringent escort requirements. Further, in the case where DOE denied a visit, Defense Programs officials said that they told appropriate laboratory officials their reasons for doing so. DOE officials also said that an investigation of one case discussed above determined that security had not been compromised.

DOE Recognizes Problems With Its Indices Check Procedures

Although foreign visitors have been allowed into the laboratories without complete indices check data, DOE officials in Defense Programs and International Affairs do not believe that this has resulted in significant security problems. They pointed out that indices checks are not a foolproof method to identify individuals who are security risks, because the checks only provide known information on foreign visitors. Consequently, they assume that all foreign visitors pose a potential risk and implement other controls, such as escort requirements, to ensure that access to sensitive information is prevented. In fact, according to these officials, the security plans and host reports serve as their primary control method and the indices checks merely supplement these controls. They also said that persons with derogatory indices checks may still be allowed into a laboratory if DOE believes that the risks can be effectively managed and this country can benefit from the information obtained.

Nevertheless, in a 1987 memorandum a Defense Programs official noted that the practice of allowing individuals into the laboratories without indices check results represents a significant risk. According to the memorandum, this practice negates the purpose of the indices check and, because the indices data are not available, places DOE in a position whereby it does not take special precautions or deny a visit to an individual who represents some additional risk. Several other Defense Programs officials said that, because indices check practices have been lax and the indices checks provide limited data, DOE has identified few problems with foreign access and has been lulled into a false sense of security. Similarly, a November 1987 memorandum from the San Francisco Office noted that the lack of information seriously inhibits their ability to make sound recommendations to either approve or deny a foreign visit or assignment.

DOE officials in Defense Programs also stated that efforts are being made to improve the timeliness and completeness of the indices check process. They pointed out that they are currently working with the intelligence agencies to develop a more automated system to obtain indices data. The officials said that they expect to implement a system whereby the intelligence agencies would notify DOE within 48 hours about those individuals for whom the agencies do not have information. Since past experience has shown that the intelligence agencies do not have information on many foreign visitors, they believe that such a system would greatly expedite the indices check process on the vast majority of foreign visitors. However, indices checks showing that records on an individual exist would still require extensive, time-consuming manual searches. Further, Defense Programs officials stated that they are directing field offices to submit indices checks directly to the FBI and the CIA without going through headquarters and to submit the names as early as possible, even before plans for the visit have been finalized. They are hopeful that these measures will provide more timely completion of indices checks.

DOE Not Using Other Data to Identify High-Risk Visitors

DOE requires indices checks and headquarters approval of all individuals from communist countries; however, background checks and headquarters approval are not required for individuals from sensitive, proliferation-risk countries unless they are going to a secure area or are discussing a sensitive subject. Although field office officials have the authority to request additional indices checks, the foreign visitors program has no other criteria for additional scrutiny of foreign visitors' backgrounds. However, DOE has developed information for other agencies regarding proliferation-risk countries that it should make available to its field offices.

DOE's Office of Defense Programs has developed a classified Nuclear Proliferation Watch List that identifies facilities and organizations in certain countries suspected of conducting activities related to nuclear weapons development. DOE developed this list for the Commerce Department to use in referring export cases to DOE. DOE performs a detailed review of these requests to ensure they are not contrary to U.S. nonproliferation policy, do not contribute significantly to unsafeguarded nuclear activities in nonweapons states, and are not detrimental to the interests of the United States. All potentially high-risk exports—including technical information—to the facilities or organizations identified in the list are to be reviewed to ensure that they do not represent a proliferation risk.

However, a number of visits and assignments to the weapons laboratories involved individuals from facilities identified in the watch list. We found that 65 visitors and assignees to the laboratories were affiliated with these sensitive facilities. Some of the visits and assignments involved potentially sensitive subjects, such as isotope separation, behavior of explosives, nuclear modeling, and laser plasma experiments that could be related to weapons testing.

Under DOE Order 1240.2, indices checks and headquarters reviews were not required for any of these visits because the visitors were not from communist countries and the subjects were not identified as sensitive. Consequently, DOE headquarters officials responsible for nuclear nonproliferation were not required to ensure that the visitors' activities are consistent with U.S. policy. Of the 65 visitors and assignees affiliated with sensitive facilities or organizations, DOE headquarters reviewed 7 because they involved high-level foreign officials and were initiated by headquarters. According to DOE field office officials, they did not request indices checks or obtain headquarters review because they were not aware that these individuals were from facilities or organizations that may be connected with nuclear weapons development. Further, the officials were not even aware that the watch list existed.

Officials from DOE's Office of Defense Programs responsible for developing the list confirmed that they had not distributed it to the field offices. They pointed out, however, that the sensitive subject criteria in DOE's order should have alerted the field offices and laboratories to submit requests for headquarters review and indices checks. If these requests had been submitted, headquarters would have used the watch list in its evaluation, they said.

Defense Programs officials also stated that inclusion of a facility or organization on the watch list does not necessarily mean that it conducts nuclear weapons work or that the individual is involved in such activities. Rather the list is intended to alert the user that additional scrutiny is warranted for visitors from these facilities, they said. Nevertheless, the officials agreed that it was inconsistent to advise the Commerce Department to refer all export requests involving these facilities to DOE for review while at the same time allowing individuals from such facilities to participate in activities at the weapons laboratories without similar DOE oversight. They plan to provide copies of the watch list to the field offices to assist in identifying foreign visitors and assignees that may require additional review.

Some Visits May Have Involved Potentially Sensitive Subjects

DOE attempts to limit foreign national involvement in sensitive activities or subjects at the laboratories. DOE Order 1240.2 requires that headquarters officials review and approve those foreign nationals who want to participate in these activities. Of the 818 communist and sensitive visitor files we reviewed, DOE identified only 1 assignment as dealing with a sensitive subject. However, we found that foreign visitors from communist and other sensitive nations have been involved in activities that have been identified as sensitive by DOE's own criteria, such as lasers, nuclear physics, and particle beams, that could assist countries develop and produce nuclear weapons. In only a few cases, the field offices and laboratories sent the requests to DOE headquarters for review, but they did so because the prospective visitor was from a communist country, not because the visit involved a sensitive subject.

Visits Involved Sensitive Subjects

DOE Order 1240.2 identifies 18 sensitive subjects, such as nuclear fuel production and reprocessing, inertial confinement fusion, and other technologies related to nuclear and conventional weapons. These subjects are shown in appendix III. In order to protect national security interests and proprietary information or to further U.S. foreign policy, DOE requires that any foreign involvement in these subject areas receive special consideration, such as DOE headquarters review and approval. According to Defense Programs officials, the sensitivity of each subject varies to some degree, but for the most part the subjects identified in the order relate either to the production of special nuclear material or the development of weapons. According to DOE's order, all visits and assignments involving sensitive subjects must be approved by the Assistant Secretary for International Affairs and Energy Emergencies.

During our sample period, DOE's field offices and laboratories identified only 1 of the 818 communist and sensitive country visits as involving a sensitive subject. The visit involved a foreign national from India who attended a workshop on reprocessing-related activities at Los Alamos. DOE's Office of International Affairs and Energy Emergencies approved the visit because the individual is working on the design of a new extractant under a laboratory contract with the University of New Mexico.

However, we identified at least 37 other visits and assignments that either directly involved or had activities related to sensitive subjects listed in the DOE order. The sensitive subjects were inertial confinement fusion, uranium enrichment, and directed energy systems. These visits included the following:

- 11 Chinese visited Livermore and 3 Soviets visited Los Alamos to discuss inertial confinement fusion. The Soviets also visited Livermore to discuss the same subject and laser isotope separation, a technology being developed for uranium enrichment.
- 4 foreign visitors from Israel visited Livermore for activities associated with lasers, including those used in weapons-related applications.
- 3 foreign nationals from communist countries and 3 from Israel visited Los Alamos to discuss laser isotope separation.
- 4 Chinese, 1 Soviet, and 8 individuals from other sensitive nations (such as Korea, Taiwan, and Brazil) visited the three laboratories concerning rail guns, free electron lasers, and particle beams. These topics relate to directed energy technologies.

However, none of these visits were identified as involving sensitive subjects by the laboratories to alert DOE that additional scrutiny may be warranted. Consequently, the majority were not reviewed and approved by DOE headquarters as required by the DOE order. Of the 37 visits that related to sensitive subjects, only 15 were reviewed at DOE headquarters; however, these were reviewed because the prospective visitor was from a communist country. The other 22 visitors were not reviewed by DOE headquarters.

According to laboratory officials, the DOE sensitive subjects list is very broad and does not provide clear guidance as to what activities are to be covered. For example, Los Alamos officials point to the nuclear weapons supporting technologies category as a subject that is not clear in the order. They pointed out that DOE has issued no guidance concerning the types of subjects that are included in this category. Because of this confusion, the laboratory relies on its own classification officials to determine whether a proposed visit or assignment involves a sensitive subject. According to laboratory officials, if that office determines that the information is not classified, they generally regard the subject as nonsensitive and open to discussion with foreign visitors.

Some Visits Involved Other Potentially Sensitive Subjects

DOE's visits and assignment order does not include a number of potentially sensitive weapons-related technologies. For example, one classified DOE document identifies 33 areas (some with multiple subareas) of unclassified technology that relate to nuclear weapons. These items are not specifically delineated in the sensitive subject list in the order. Further, DOE officials stated that other technology areas, such as sophisticated atmospheric computer modeling and astrophysics, provide knowledge that could have nuclear weapons uses.

We found at least 14 visits or assignments that involved subjects listed either in DOE's classified document or considered sensitive by DOE officials. None were reviewed and approved by DOE headquarters. The subjects included special cameras, high explosives, and astrophysics. These visits included the following:

- Two foreign nationals from China visited Livermore to discuss the feasibility of their manufacturing components for special cameras that are used in nuclear weapons tests.
- Six foreign nationals from Israel and India visited or were assigned to various laboratories to conduct research or discuss theoretical astrophysics. DOE documents state that astrophysics is closely tied to understanding nuclear weapons phenomena and nuclear detonations.
- One foreign national from Israel assigned to Los Alamos collaborated in research related to high explosives. This research involved predicting the initiation and detonation behavior of a high-explosive specifically used in nuclear weapons applications. Further, four other visitors from Israel and one from India were involved in research related to explosives and shock waves.

DOE Recognizes Problems With the Identification of Sensitive Subjects

DOE officials recognize that they have not identified all foreign visits that involve sensitive subjects or included all sensitive technologies in Order 1240.2. For example, a November 1987 report by the Office of Defense Programs concluded that field office and laboratory officials did not identify all visits and assignments that dealt with sensitive subjects. According to the report, over a 4-week period several visit and assignment requests explicitly stated that sensitive subjects would not be discussed. However, the subjects listed on the request are clearly included in DOE's order. Office of Defense Programs concluded that a high probability exists that field office and laboratory officials do not correctly identify a visit or assignment that involves a sensitive subject.

DOE field office and laboratory officials acknowledged that problems exist in identifying visits and assignments that involve sensitive subjects. This occurs, according to these officials, because (1) the order lists general categories and DOE headquarters has not provided specifics applicable to them, (2) the order lists only a limited number of subjects, and (3) field office staff who process visit and assignment requests lack the technical expertise to determine that a subject is sensitive.

According to Defense Programs officials, DOE's foreign visitor controls have been directed more towards physical security than technology security. They stated that because of this emphasis the sensitive subjects list does not encompass all activities that could benefit a foreign nuclear weapons program. They pointed out that most of these activities—such as astrophysics—have peaceful and beneficial purposes, but they could also pose a proliferation risk. In this regard, officials at Los Alamos stated that virtually all their activities have some nuclear weapons and basic science applications. Consequently, they believe it is very difficult to draw the line between weapons applications and basic science.

In addition, both DOE field office and laboratory officials responsible for approving foreign visit requests said that they have little technical background or training to identify sensitive subjects. Consequently, they rely on the laboratory initiating organization to properly identify sensitive subjects. Further, Defense Programs officials said that, although they do have technical experts to review requests, the requests must be referred to them by the Office of International Affairs. However, if subjects are not identified as sensitive by the initiating organization, they generally would not refer a request to Defense Programs for technical review.

According to Defense Programs and International Affairs officials, some efforts are being made to improve controls over sensitive subjects. They pointed out that recently they have denied visits concerning inertial confinement fusion that involve foreign nationals from China and the Soviet Union. Further, they plan to expand the sensitive subject list and clarify the activities to be included on it. As mentioned in chapter 1, DOE began revising Order 1240.2 in October 1986; DOE expects to issue the revised order in October 1988. According to International Affairs and Defense Programs officials, the revised order will incorporate clarifications for sensitive subjects and may delegate additional approval authority to the field offices. However, DOE does not plan to assign staff with greater technical expertise to the field offices to review foreign visit and assignment requests for sensitive subjects. DOE believes that ongoing training and proliferation awareness efforts—along with an expanded sensitive subject list—should improve the field office's capability to identify sensitive subjects.

Chapter 3

Internal Control Improvements Needed

DOE's foreign visitor and assignment order contains requirements directed at ensuring that the agency carries out its programs consistent with laws, regulations, and policies in an efficient and effective manner. These internal controls are also intended to ensure that the agency obtains and maintains reliable information to enable it to evaluate ongoing activities and identify problem areas requiring management attention.

We found, however, that the laboratories have not always complied with existing controls. Specifically, the laboratories

- have allowed visitors access without properly authorized approvals.
- do not always prepare security plans.
- do not submit required host reports or submit them late.

In addition, DOE has not established an integrated data system to facilitate processing and analyzing visits and assignments and does not conduct audits of compliance with DOE's foreign visitor controls.

Improper Approvals of Foreign Visits

Because of the various factors that must be considered in allowing foreign access to the laboratories—such as program benefits, security risks, and proliferation concerns—separation of program and approval authority can best ensure that foreign visits are in the best interest of the government and do not conflict with other policies. DOE's order specifies certain officials that can approve access to the laboratories, with higher level approvals required for more sensitive visits. However, some visits and assignments are being approved at improper levels.

All visits to the laboratories must be approved by authorized DOE headquarters, field office, or laboratory officials. DOE headquarters must approve all visits and assignments involving sensitive subjects, sensitive or communist-controlled countries to secure areas, high-level foreign officials, and all communist-controlled country assignments. DOE field offices must approve all other visits and assignments unless the field office delegates this authority to the laboratory. The field offices have delegated the authority for approving all nonsensitive subject visits involving nonsensitive countries to the laboratories. However, in accordance with the order, this approval authority cannot be redelegated below the laboratory deputy director level.

Contrary to the requirements of the DOE order and the field office delegations, visits and assignments are approved at inappropriate levels. For example,

- Los Alamos officials in group and deputy group leader positions—at least five levels below that authorized by DOE's order—approve foreign visits. On the basis of a sample of 100 visitors from nonsensitive countries, we found that 62 were approved by such officials. We raised this discrepancy with Los Alamos officials, and on June 22, 1988, the laboratory director issued a memorandum that authorized some lower level officials to approve visits. In the memorandum, the director stated that this "is not a delegation of authority." In our view, however, this is not consistent with the requirements of DOE Order 1240.2.
- Sandia officials approved 11 of 22 visits by citizens from communist countries. However, Albuquerque did not delegate this approval authority to the laboratory and no DOE office approved them. Further, one of the visitors the laboratory approved is suspected of being affiliated with a foreign intelligence service.
- Livermore officials approved visits for sensitive country visitors. Eight visitors—including two from Israel and three from India—were approved by Livermore; the San Francisco office did not delegate approval authority to the laboratory for these types of visits.
- One visitor from Brazil to a secure area at Livermore was not approved by DOE headquarters as required; only field office approval was obtained. Further, DOE headquarters had no record of this visitor.

In addition, some visits and assignments were approved by DOE after they occurred. At Sandia, 4 communist and 16 sensitive country visitors or assignees were approved by Albuquerque after the visit had occurred. At Los Alamos, five foreign nationals from sensitive countries and three from nonsensitive countries were approved after the visit or assignment began.

Some Laboratories Are Not Developing Security Plans

Once foreign nationals have been granted access to a weapons laboratory, security concerns over their participation in laboratory activities does not end. In this regard, DOE requires that the responsible organization develop security plans to ensure that only approved activities take place during the visit and access to classified or otherwise sensitive information is prohibited. According to Defense Programs officials, these plans are a key mechanism to assess the risk involved in a visit or assignment and to prevent access to information or areas that cause a security concern.

DOE's order mandates that field office develop and institute security plans for proposed visits and assignments to sensitive facilities that involve foreign nationals from communist or sensitive countries to secure areas. In actuality, however, the laboratories prepare the plans and submit them to the field office with proposed visit requests. The security plans are to include, among other things, an inspection of the area to be visited, posting of signs cautioning employees that uncleared persons are in the area, and a review of escort responsibilities by employees involved in the visit or assignment.

Our review of DOE and laboratory files showed that Livermore prepared and submitted security plans as required. However, Los Alamos and Sandia did not submit all the required security plans. Los Alamos provided only 83 of 171 security plans to DOE; Sandia prepared 73 of 77 required but only provided 6 to DOE.

According to Albuquerque security officials, they have not been diligent in requesting security plans for foreign nationals visiting the laboratories. They added that, because of the laboratories' security controls and escort requirements, they do not believe that any harm has resulted from not having DOE-approved plans. Nevertheless, the officials stated that they intend to improve their followup efforts to ensure that the laboratories develop security plans before DOE approves the visit. Defense Programs officials said that, since GAO started its review, the laboratories have provided more of the required security plans.

Host Reports Not Prepared

In order to ascertain the events that occurred during a foreign visit or assignment and to document the benefits derived, DOE Order 1240.2 requires a post-visit, or host, report. A report that details the events that occurred during a visit or assignment can provide a basis for DOE and others to (1) evaluate if the visit was consistent with its stated purpose, (2) determine whether the visit resulted in a benefit (or loss) to the United States, and (3) assess the risk involved in continued participation by the visitor in U.S. programs.

The order provides that, within 30 days after a visit by a foreign national from a communist-controlled country or any visit involving a sensitive subject or a secure area, the host or principal escort must prepare and submit a report to DOE headquarters. In part, the report must contain information on

- subjects of major interest to the visitor, and any significant conclusions, observations, and opinions expressed concerning the discussions or the research performed.
- significant data obtained from the visitor concerning programs in his/her country.
- specific contributions of the assignee to the DOE program involved.
- documents or other materials furnished to or by the visitor or assignee.

Under DOE's policy, the field offices must ensure that host reports are prepared and submitted to DOE headquarters. However, few host reports are being prepared within the 30-day deadline, and some are not prepared at all. We found that 187 host reports should have been prepared during the 21-month period we reviewed; the laboratories prepared only 44—about 25 percent—within the required 30 days. Of the remainder, the laboratories prepared 85 as much as 496 days after the visit and did not prepare 55. Table 3.1 shows the laboratories' performance in providing required host reports.

Table 3.1: Laboratories' Performance in Submitting Host Reports

	Host reports required	Completed on time	Completed late	Not completed
Livermore	62	9	50	3
Los Alamos	77	27	38	12
Sandia	48	8	•	40
Total	**187**	**44**	**88**	**55**

DOE field office and laboratory officials acknowledged that their performance in meeting host report requirements was not adequate. According to Albuquerque officials, the host reports can show whether visits deviated from their stated purpose and ascertain the benefits obtained, but the lack of reports—particularly in the case of Sandia—prevents DOE from making such evaluations. Albuquerque officials said that they have not established a mechanism to followup on host reports and ensure they are completed; San Francisco officials said that host reports receive low priority and are provided to headquarters as time and workload permits.

No Integrated Data System on Foreign Visitors

DOE currently does not have an integrated, accessible system for maintaining data on foreign visits and assignments. The laboratories and DOE headquarters maintain their own data bases. In fact, DOE headquarters has three separate data bases—two in the Office of Defense Programs and one in the Office of International Affairs and Energy Emergencies—

on foreign visitors. According to officials in the respective offices, the International Affairs data base summarizes the visits and assignments that have been reported to DOE headquarters. The Defense Programs data bases provide historical information on foreign visits for that office to use in analyzing visit requests and determining trends in foreign information gathering activities.

In addition, all the laboratories maintain data bases on the visitors to their respective facilities, but the laboratory systems are not connected to the headquarters data bases. DOE headquarters only records foreign visits or assignments in the data bases when notified by the laboratory. However, DOE only requires this notification for communist visitors, visitors to secure areas of sensitive facilities, and visitors involved in sensitive subjects.

As a result, DOE headquarters does not have complete data on foreign visits to the weapons laboratories. We compared the data base maintained by the Office of International Affairs to the visits and assignments that occurred at the laboratories. We found that 106—or about 13 percent—of communist and sensitive visitors to the laboratories were not in the data base. These included

- a communist who visited a laboratory to discuss laser research. DOE denied this visitor access 6 months later on a similar visit to the same laboratory.
- a communist visit involving the Strategic Defense Initiative program.
- 31 individuals from India who visited or were assigned to various laboratories in areas related to lasers and undefined chemistry activities.
- [illegible] Israelis who visited or were assigned to various laboratories in areas related to astrophysics, explosives, and other potentially sensitive subjects.

Further, maintaining separate data bases prevents field offices and laboratories from obtaining access to information necessary for their approval decisions. According to field office and laboratory officials, they approve visits and assignments unless information is available that indicates the visit may pose a risk. However, such information may not be made available to the appropriate levels. In one instance an indices check on an assignee from a nonsensitive country (Austria) disclosed information that raised concerns about his participation in laboratory activities; the laboratory did not extend the assignment. However, this individual later was granted access to a different laboratory for a number of visits without the laboratory's knowledge of the problems in his background. Although we cannot determine whether these visits would have been denied had this information been available, this data should be a factor in the approval decision.

DOE officials agreed that they do not have complete data on foreign visitors and assignees. Officials in the Office of International Affairs pointed out that they computerized their data base in 1986 in order to provide more accurate and complete information on foreign visits to the DOE complex, and they now believe that the data base more accurately reflects the individuals visiting the weapons laboratories. They pointed out that the laboratories and field offices are not required to notify headquarters of each visit—such as those from friendly countries. Consequently, they do not expect the data base to be complete. Defense Programs officials stated that they were aware that their data bases were not complete, but they have confidence that they are reasonably accurate.

Nevertheless, both Defense Programs and International Affairs officials agreed that a need exists for an integrated data entry and retrieval system that would allow headquarters and field organizations to input directly to the data base and obtain relevant information for approval decisions. They pointed out that since 1986 they have discussed developing a system that would fully integrate the field offices and headquarters information and would include software that would provide counterintelligence capability. However, they added that developing and implementing the system have been put on hold because of cost and other concerns. The officials could not estimate if or when such a system would be developed.

No Systematic Audit Function

DOE's internal control systems manual states that reviews and audits are necessary to provide reasonable assurance that controls are in place and working effectively. The manual further states that audits or reviews should be conducted at a minimum of every 5 years. However, we could not find any audits or reviews of the foreign visit and assignment program at the weapons laboratories by any DOE organization.

DOE has a multilayered program to assess the contractors' compliance with its visit and assignment requirements. Headquarters offices such as Defense Programs, operations offices, and contractors all have responsibilities to conduct reviews of this area. At the headquarters level, Defense Programs conducts periodic assessments of the security of all DOE facilities and selects various aspects of security for review during each assessment. According to an official responsible for these reviews, foreign visits and assignments is one area that could be selected. However, he could identify only two instances—one at the Argonne National Laboratory, Illinois, in 1986 and one at DOE headquarters in 1987—where headquarters assessed foreign visit and assignment controls.

Similarly, DOE's field offices were unable to document any reviews of the foreign visit and assignment activities under their jurisdiction. Officials from the field offices said they have not performed any audits or reviews of foreign visits and assignments because they do not have adequate resources, and they do not believe that any significant problems exist in this area. However, if DOE headquarters or field offices had audited or reviewed the visit and assignment program, they might have found and resolved the weaknesses cited in this report. Further, DOE Order 1240.2 requires field office managers to ensure that DOE and laboratory personnel under their jurisdiction are informed of, and comply with, requirements and procedures. As we found, however, the field offices are not following the process established.

Chapter 4

Conclusions and Recommendations

DOE's nuclear weapons laboratories possess sensitive information that would be valuable to foreign nations, and valid concerns exist regarding the technology security at these facilities. Studies conducted by DOE conclude that unclassified information at the laboratories may provide foreign countries details on sensitive—and even classified—activities that the United States conducts. It is also widely known, as pointed out by DOE and other federal officials, that some foreign countries try to obtain information and technology from the United States.

Although such concerns exist, DOE permits foreign nationals—including those from communist-controlled and other countries that DOE believes conduct nuclear weapons-related activities—to participate in unclassified activities at the weapons laboratories. DOE allows foreign visits and assignments as part of its policy to encourage international cooperation and technical exchange. As a result, DOE tries to strike a balance between security concerns and its foreign visitor policy and has instituted management controls to reduce the risks associated with these visits.

However, DOE's controls over foreign access to its nuclear weapons facilities do not provide adequate assurance that foreign visits and assignments do not pose a security and/or proliferation risk. Although we could not determine if sensitive or classified information has been lost to foreign countries as a result of these activities, weaknesses exist in three areas that affect DOE's ability to ensure the security of the weapons laboratories.

First, DOE's procedures to obtain and review background information on foreign nationals are not effective. For the most part, DOE headquarters and field office and laboratory officials do not follow the procedures established to obtain indices checks. In the cases where DOE requested the checks, the results were usually obtained after access was granted. In our view, allowing high-risk individuals access to these facilities without DOE's first obtaining available government information on their backgrounds runs contrary to the purpose of the indices check process. Further, other criteria, such as DOE's watch list that identifies potentially sensitive facilities in foreign countries, are not used to identify individuals who may be of concern.

Second, DOE has little assurance that visits and assignments do not provide sensitive information to communist or other sensitive nations. Foreign involvement in sensitive activities requires DOE headquarters review and approval, but the identification of these types of visits or assignments has been weak. Further, confusion exists over the activities that should be considered sensitive, and DOE staff—particularly at the field office level—do not have the technical expertise to review foreign visit requests for sensitive subjects.

Third, DOE does not have effective internal controls over foreign visits and assignments. According to DOE's internal control systems manual, these controls are essential to achieve management objectives, serve as checks and balances against undesired actions, and prevent negative consequences from occurring. However, such controls are not fully in place. As a result, a number of problems exist such as improper delegations of approval authority, failure to provide DOE notification of visitors, and inadequate submission of required reports on the results of visits. Further, DOE has no procedures to systematically review the laboratories' compliance with the requirements of DOE Order 1240.2. Finally, DOE has no integrated system to obtain and provide data on visits and assignments. As a result, DOE does not have consolidated information to analyze foreign visits or a mechanism to make field offices aware of all information that may be relevant to their approval decisions.

When viewed in their totality, the effects of existing weaknesses cast considerable doubt on DOE's ability to prevent adversary or proliferant nations from obtaining sensitive weapons-related information and technology. The fact that foreign nationals with suspected intelligence connections have been granted access to the laboratories without prior DOE knowledge reflects a significant weakness in DOE's control procedures. Further, allowing foreign nationals suspected of conducting weapons development activities into the laboratories without DOE oversight raises questions about the consistency of DOE's actions with this country's nonproliferation policy. This policy prohibits direct or indirect assistance to countries in the development of nuclear weapons.

DOE needs to make changes in its foreign visitor control program for the weapons laboratories to better ensure that foreign access to the weapons laboratories does not pose a security and/or proliferation concern. We recognize that the majority of foreign visits and assignments represent little or no risk. However, the significant risk that some represent as well as DOE's lack of adequate controls highlight the need for DOE to make a number of changes to improve its visit and assignment program. To better ensure that foreign visits and assignments do not pose a security risk, DOE needs to undertake actions that would

- obtain all pertinent data on high-risk individuals visiting the laboratories before access is granted,

- identify all laboratory activities with foreign nationals that could involve information or technology that could be of concern,
- provide complete and accurate data on foreign visitors to appropriate officials in the DOE complex, and
- establish procedures for monitoring compliance with DOE visitor control requirements.

Although DOE has recognized that it has a number of problems with its foreign visitor control program, we anticipate that DOE and the laboratories may raise concerns regarding stronger controls over foreign visits and assignments. Stronger controls may result in extra time to approve visits and assignments and in a greater burden on officials responsible for requesting, processing, and reporting on these activities. Nevertheless, the benefits far outweigh the time and effort required by stronger controls. A major benefit would be that high-risk visits and assignments would be identified before they occur, and DOE could take appropriate action to prevent or limit such access. In our view, only then will DOE have a mechanism to reduce the security and proliferation risks of foreign visits and assignments to its weapons laboratories while at the same time fulfilling its policy of international cooperation and technical exchange at these facilities.

Recommendations to the Secretary of Energy

In order to prevent security breaches concerning nuclear weapons-related information, DOE needs to improve its management of foreign visits and assignments to its weapons laboratories. Therefore, we recommend that the Secretary of Energy

- Revise the order controlling foreign visits and assignments to (1) require that indices checks are completed prior to admitting a foreign national to a weapons laboratory; (2) require the use of additional criteria, such as the watch list, to identify potentially sensitive visitors that require additional scrutiny; and (3) expand the sensitive subjects list to include additional areas that could be useful to adversary or proliferant nations.
- Establish an integrated data collection and dissemination system to provide DOE and the laboratories timely and pertinent information to use when approving foreign visits.
- Require periodic evaluations of field office and laboratory compliance with the requirements of DOE's foreign visit and assignment order.

Appendix I

Visitors and Assignees to DOE Weapons Laboratories From January 1986 Through September 1987

Communist countries	Lawrence Livermore	Los Alamos	Sandia	Total
Bulgaria	•	1	•	**1**
People's Republic of China	41	69	8	**118**
Czechoslovakia	•	1	•	**1**
East Germany	•	2	1	**3**
Hungary	2	9	•	**11**
Poland	2	10	3	**15**
Romania	1	•	•	**1**
Soviet Union	13	34	10	**57**
Yugoslavia	1	14	•	**15**
Total	**60**	**140**	**22**	**222**
Sensitive countries				
Algeria	2	1	•	**3**
Argentina	2	14	2	**18**
Brazil	13	19	•	**32**
Chile	14	2	•	**16**
Egypt	10	5	2	**17**
El Salvador	1	3	51	**55**
Ethiopia	•	1	•	**1**
Guyana	•	1	•	**1**
India	84	56	9	**149**
Iran	18	5	2	**25**
Iraq	•	2	•	**2**
Israel	75	60	53	**188**
Lebanon	4	•	•	**4**
Malawi	•	1	•	**1**
Nicaragua	1	•	•	**1**
Niger	•	1	•	**1**
Nigeria	5	2	•	**7**
Pakistan	7	4	•	**11**
Saudi Arabia	•	2	•	**2**
South Africa	9	7	1	**17**
South Korea	40	19	8	**67**
Syria	•	1	•	**1**
Taiwan	26	14	11	**51**
Tanzania	1	2	•	**3**
Zambia	1	1	•	**2**
Total	**313**	**223**	**139**	**675**
Total	**373**	**363**	**161**	**897**

Communist-Controlled and Other Sensitive Countries Identified in DOE Order 1240.2

Communist-Controlled	Afghanistan Albania Bulgaria Cuba Czechoslovakia Cambodia East Germany Hungary Laos Mongolia North Korea People's Republic of China Poland Rumania Soviet Union Vietnam Yemen Yugoslavia
Other Sensitive	Algeria Andorra Angola Antigua Argentina Bahrain Belize Benin Brazil Burma Chad Chile Comoro Islands Congo Djibouti Egypt El Salvador Ethiopia Grenada Guyana India Iran Iraq

Israel
Kiribati
Kuwait
Lebanon
Libya
Malawi
Mauritania
Mozambique
Namibia
Nicaragua
Niger
Nigeria
Oman
Pakistan
Qatar
Saudia Arabia
Solomon Islands
South Africa
South Korea
Syria
Taiwan
Tanzania
United Arab Emirates
Vanuatu
Yeman Arab Republic
Zambia
Zimbabwe

Sensitive Technology Areas Identified by DOE Order 1240.2

Technology Area
Uranium Enrichment
Reprocessing Technology
Plutonium and Uranium-233 Production, Handling and Metallurgy
Heavy Water Production
Fuel Fabrication
Uranium Hexafluoride Production
Large-Scale Tritium Production Technology
Naval Nuclear Propulsion Information
Nuclear Reactors
Inertial Confinement Fusion
Advanced Seismic Detection
Radiation Detection and Hardening of Satellites
Physical Security Systems
Directed Energy Technologies
Nuclear Weapons Supporting Technologies
Superconducting Magnets Associated with Magnetohydrodynamics
Electronics - Semiconductor Manufacturing Technology
Items Controlled Under the Export Administration Act of 1979

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